



Low maintenance UV nitrate sensor

- **Product type**
Attended, Unattended
- **Features**
Ethernet, Data Logger, RS-485 (Modbus RTU)
- **Product highlights**
Smart optical technology, access with web browser, optional anti-fouling wiper, calibration verification, flexible application options
- **IP-Communication**
No
- **Sensor interfaces**
Ethernet (TCP/IP), RS-485 (Modbus RTU), SDI-12 (via converter)

Advancing UV nitrate sensors, the OTT ecoN combines field reliability with a user friendly, low operational cost, future ready platform. It uses optical UV absorption technology for the determination of nitrate concentrations in fresh environmental surface and groundwater. The calculation of nitrate from the filtered absorption spectrum includes compensations for turbidity and organic interferences. Nitrate measurements and sensor status information is available in real-time for integration into data acquisition systems. The anti-fouling wiper reduces maintenance requirements and extends deployment times for continuous monitoring locations.

Operation & System Setup

1-3

We reserve the right to make technical changes and improvements without notice. V-25/05/2023
OTT Hydromet GmbH, Germany



| | |
|-----------------------|---------------------------------|
| Light Source | Xenon flash lamp |
| Detector | 4 photo diodes + filter |
| Measurement principle | Attenuation |
| Optical path | 0.3 mm, 1 mm, 2 mm, 5 mm, 10 mm |

| Input Data | |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parameter | NO ₃ -N, NO ₃ , NO _x -N, NO _x (calibrated with NO ₃ standard solution) |
| Measuring range | 0.3 mm path 1.65...200 mg/L NO ₃ -N 1 mm path 0.5...60 mg/L NO ₃ -N 2 mm path 0.25...30 mg/L NO ₃ -N 5 mm path 0.1...12 mg/L NO ₃ -N 10 mm path 0.05...6 mg/L NO ₃ -N |
| Measurement accuracy | 0.3 mm = ± (5 % + 3.3 mg/L NO ₃ -N) 1 mm = ± (5 % + 1.0 mg/L NO ₃ -N) 2 mm = ± (5 % + 0.5 mg/L NO ₃ -N) 5 mm = ± (5 % + 0.2 mg/L NO ₃ -N) 10 mm = ± (5 % + 0.1 mg/L NO ₃ -N) |
| Turbidity compensation | Yes |
| Data logger | 2 GB |
| T100 response time | 20 s |
| Measurement interval | ≥ 10 s |

| Constructional Design | |
|-----------------------|-----------------------------------------------------------------------|
| Housing material | Stainless steel (1.4571/1.4404) |
| Dimensions (L x Ø) | 470 mm x 48 mm (10 mm path) 18.5 inch x 1.9 inch (with 10 mm path) |
| Weight | 3 kg (6.6 lbs) |

| Auxiliary Power | |
|-------------------|-------------------------------------------------|
| Interface digital | Ethernet (TCP/IP) RS-485 (Modbus RTU) SDI-12 |
| Power supply | 12...24 VDC (± 10 %) |

| Output Data | |
|-------------------|-------|
| Power consumption | ≤ 7 W |

| Performance Characteristics | |
|-----------------------------|------------|
| System compatibility | Modbus RTU |
| Warranty | 2 years |

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Installation

| | |
|-----------------|-------------------|
| Max. pressure | 3 bar (43.5 psig) |
| Protection type | IP68 NEMA 6P |

Ambient Conditions

| | |
|--------------------|-------------|
| Sample temperature | +2...+40 °C |
|--------------------|-------------|