# HIGH NITRATE /NITRITE SENSOR

**HNL** SERIES



*REAL*
**HIGH NITRATE/ NITRITE**
**HNL** SERIES

**REALTECH**
realtechwater.com

## FEATURES & BENEFITS

- Affordable real-time nitrate ($NO_3$) and nitrite ($NO_2$) monitoring

- Ideal for monitoring high levels of nitrate and nitrite

- Multiple wavelength sensor uses UV LED technology for superior measurement performance

- Bypass style sensor with multiple flow cell selections to meet application demands

- Operator friendly, low-maintenance UV and Visible LED design

- Reagent free optical measurements

- Simple to install and operate

## REAL-TIME MONITORING SOLUTION

### High Nitrate/Nitrite Sensor

Real Tech's bypass High Nitrate/Nitrite Sensor provides affordable real-time measurement of high levels of nitrate ($NO_3$) and nitrite ($NO_2$) in water or wastewater. Designed to meet the needs of many monitoring applications, the HNL series offers multiple flow cell designs and sensor path length selections to meet the desired measurement range.

### Controllers and Accessories

Our innovative modular product platform ensures our clients gain the real-time water quality monitoring system that meets their specific demands and budget. With multiple controller and accessory options available such as automatic chemical cleaning systems that lower maintenance while improving system performance, Real Tech provides a total solution for all of your unique water quality monitoring needs.

### Liquid Ai Compatible

Our Liquid Ai data services complement our real-time water quality monitoring systems. Our Remote Monitoring platform is a powerful data management and visualization tool that enables access to data anywhere, anytime.

## MEASUREMENT PRINCIPLE

Real Tech's High Nitrate/Nitrite Sensor provides superior measurement performance across multiple wavelengths of light using UV and Visible LEDs. Many compounds absorb light in the UV-VIS spectrum, and how much the compounds absorb is directly proportional to their concentration. Compounds that may interfere with measurement are compensated for using additional reference wavelengths. Real Tech's innovative High Nitrate/Nitrite Sensor is advancing water and wastewater management.

**MUNICIPAL DRINKING WATER**
**MUNICIPAL WASTEWATER**
**INDUSTRIAL PROCESS WATER**
**INDUSTRIAL WASTEWATER**

**REALTECH**
INC.

# HIGH NITRATE/NITRITE SENSOR SPECIFICATIONS

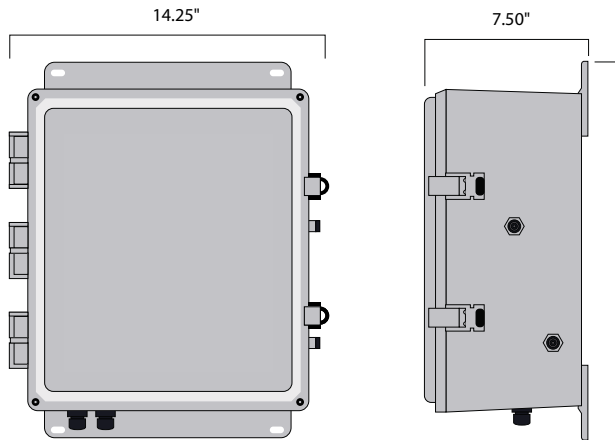| CHARACTERISTIC | TECHNICAL DATA | | |
|---|---|---|---|
| Model Series | 1000 series | 2000 series | 4000 series |
| Path Length | 0.5, 1, 2, 4, 10 mm | 1, 2, 4, 8 mm | 25, 50, 100, 150 mm |
| Parameters | Nitrate ($NO_3$) and nitrite ($NO_2$) | | |
| Range | Depends on model selected. Refer to range chart. | | |
| Accuracy | ± 0.5% full scale | | |
| Units | mg/L, ppm | | |
| Sampling Time | 30 seconds | | |
| Calibration | Factory calibrated. Field adjustment of calibration is possible. | | |
| Cleaning | In-situ chemical cleaning makes cleaning quick and easy. Automatic chemical cleaning is optional. | | |
| Self-Diagnostics | Detection and diagnosis of internal system fault | | |
| Alarms | Dry contact terminals allow for operator configurable alarms for: high and low set points, low lamp output, leaks, system fault, etc. | | |
| Humidity Control | Humidity sensor with large plug-in regenerating desiccant system | | |
| Wavelength | UV and visible light wavelengths | | |
| Light Source | UV LED | | |
| Flow Rate | 500-1000 mL/min | 300-1000 mL/min | |
| Pressure Rating | 85 PSI maximum | 20 PSI maximum | |
| Fluid Connections | 3/8" OD tube push-in fittings | 1/4" OD tube push-in fittings | |
| Wetted Materials | Kynar, FEP, Quartz, SS316L, Viton | Kynar, Polyethylene, Quartz, SS 316L, Viton | |
| Electrical/Comm. | From controller | | |
| Ambient Temp. | 0 to 45°C (32 to 113°F) | | |
| Water Temp. | 0 to 90°C (32 to 194°F) at 21°C (69.8°F) Ambient temperature | | |
| Enclosure | NEMA 4X, wall mountable | | |
| Weight | 22 lb | 24 lb | |
| Dimensions | 17"H x 14.25"W x 7.5"D | 15.82"H x 13.82"W x 9.00"D | |
| Warranty | 2-year limited warranty (Extended care packages available) | | |

* Technical Specifications are subject to change without notice.

* Water temperature range based on material compatibility only. Contact Real Tech to verify application.
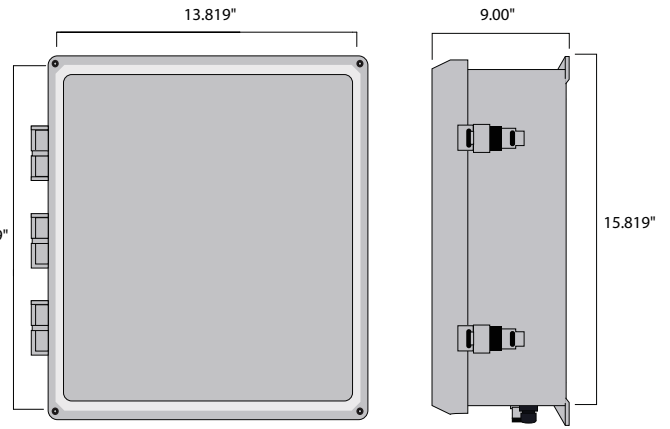
## DIMENSIONS

The High Nitrate/Nitrite Sensor is a bypass cabinet instrument installed directly on a wall, railing or system backboard. Sample is supplied to the sensor from either a pressurized source or from an open-channel using an accessory pumping system.

### DIMENSIONS FOR 1000 & 2000 SERIES MODELS



14.25"  7.50"  17.00"

### DIMENSIONS FOR 4000 SERIES MODELS



13.819"  9.00"  15.819"  15.819"

## SENSOR SELECTION

| MODEL SERIES | DESCRIPTION |
|---|---|
| 1000 | Ideal for closed loop, high pressure or high solids wastewater monitoring applications |
| 2000 | Ideal for general water monitoring applications |
| 4000 | Ideal for high purity water monitoring applications |

## SENSOR MODELS & RANGE

Includes high nitrate/nitrite sensor, flow cell, calibration bottle and dehumidifier. Controller and accessories sold separately.

| MODEL# | PATH LENGTH | $NO_3$ (mg/L) | $NO_3$-N (mg/L) | $NO_2$-N (mg/L) | $NO_2$ (mg/L) |
|---|---|---|---|---|---|
| HNL1005 | 0.5 mm | 900 - 177,000 | 200 - 40,000 | 60 - 12,000 | 200 - 40,000 |
| HNL1010 | 1 mm | 450 - 88,500 | 100 - 20,000 | 30 - 6000 | 100 - 20,000 |
| HNL1020 | 2 mm | 225 - 44,250 | 50 - 10,000 | 15 - 3000 | 50 - 10,000 |
| HNL1040 | 4 mm | 100 - 22,000 | 25 - 5000 | 7.5 - 1500 | 25 - 5000 |
| HNL1100 | 10 mm | 40 - 8,500 | 10 - 2000 | 3 - 600 | 10 - 2000 |
| HNL2010 | 1 mm | 450 - 88,500 | 100 - 20,000 | 30 - 6000 | 100 - 20,000 |
| HNL2020 | 2 mm | 225 - 44,250 | 50 - 10,000 | 15 - 3000 | 50 - 10,000 |
| HNL2040 | 4 mm | 100 - 22,000 | 25 - 5000 | 7.5 - 1500 | 25 - 5000 |
| HNL2080 | 8 mm | 50 - 11,000 | 12.5 - 2500 | 3.75 - 750 | 12 - 2500 |
| HNL4025 | 25 mm | 20 - 3500 | 4 - 800 | 1.2 - 240 | 4 - 800 |
| HNL4050 | 50 mm | 10 - 1750 | 2 - 400 | 0.6 - 120 | 2 - 400 |
| HNL4100 | 100 mm | 5 - 900 | 1 - 200 | 0.3 - 60 | 1 - 200 |
| HNL4150 | 150 mm | 3 - 600 | 0.7 - 140 | 0.2 - 40 | 0.7 - 130 |

* Stated ranges are based on testing in deionized water. Site specific conditions, such as interfering substances in the water, may limit the measuring range and accuracy. Please contact Real Tech to confirm model selection.

## CONTROLLERS

Controllers include proprietary inputs for Real Tech sensors and accessories.

| PRODUCT # | NAME | DESCRIPTION |
|---|---|---|
| S--229005 | Real Controller Lite | Wall mounted controller with 4-line x 20-character back lit LCD display. Includes modbus RTU (RS485) |
| S-169000 | Real Controller | Wall mounted controller with 4-line x 20-character back lit LCD display. Includes modbus RTU (RS485), 1 channel of 4-20 mA out and digital I/O module |
| S-11TPC | Real Controller Pro | Wall mounted controller with 12.1" colour LCD touch panel PC interface (PC inside cabinet model). Includes Modbus TCP |
| S-11TPCD | Real Controller Pro | Wall mounted controller with 12.1" colour LCD touch panel PC interface (PC external on door model). Includes Modbus TCP |

## ACCESSORIES

| PRODUCT # | NAME | DESCRIPTION |
|---|---|---|
| UVT-078130 | Real Clean System I | Automatic chemical cleaning system for use with 2000 series models |
| UVT-118010 | Real Clean System II | Automatic chemical cleaning system for use with 4000 series models |
| UVT-079121 | Pump Clean System I | Self-priming pump and automatic chemical cleaning for use with 2000 series models |
| UVT-129122 | Pump Clean System II | Self-priming pump and automatic chemical cleaning for use with 4000 series models |
| S-178121 | Dual Feed II | Dual feed option includes Digital I/O module for use with controllers |

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