

# Engineering Specification

## Hydra Nitrate Sensor

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1. The sensor shall measure the concentration of dissolved nitrate as nitrogen ( $\text{NO}_3^-$ -N) in water.
2. The sensor shall use Ion Selective Electrode technology for the Nitrate measurement, and Chloride Ion electrode, pH electrode, and temperature measurements for compensation and interferences.
3. The sensor shall contain all functionality in a single sensor body that includes: nitrate electrode, chloride electrode, pH electrode, temperature RTD, and integral spray head cleaner.
4. The sensor housing body material shall be PVC with a removable electrode guard for easy maintenance.
5. The integral spray head cleaner shall allow in situ cleaning with pressurized water or air.
6. The sensor shall allow field replacement of each electrode cartridge individually, lowering the overall cost of maintenance.
7. The sensor shall provide internal signal conditioning for amplified signals allowing up to 200 meters between sensor and analyzer.
8. The sensor body shall have internal blue LED's visible through the clear sensor body to indicate that the sensor is powered and connected to the analyzer.
9. The sensor shall measure a specific ion, have temperature range of  $0^\circ\text{C}$  to  $50^\circ\text{C}$  ( $32^\circ\text{F}$  to  $122^\circ\text{F}$ ).
10. The sensor shall be Electro-Chemical Devices HYDRA Nitrate ( $\text{NO}_3^-$ -N) Sensor, Part No. 1290030-3 (Standard), 1290030-4 (Optional with no pH sensor).