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YSI Digital VARiON® Ammonium/Nitrate/Potassium/Chloride for the IQ SensorNet System

The VARiON is a rugged, online probe for measuring Nitrate and Ammonium concentrations with Ion Selective Electrodes (ISEs) in wastewater process applications.

The VARiON probe is used within the IQ SensorNet system and can therefore be networked with other probes and parameters for a complete process monitoring and control system. It can measure, report and control off of the ammonium and/or nitrate measurements with automatic compensation for potassium (for ammonium) or chloride (for nitrate).

The VARiON is the ideal probe for quantitative measurement of nitrogen in a wastewater treatment plant. The efficient control of Nitrogen in wastewater relies on the ability to take the measurements directly in the process. This direct ISE measuring technology is possible with the VARiON sensor, enabling optimization of a plant in respect to process efficiency and energy consumption.

Parameters:

Nitrate

Ammonium

Potassium (compensation & can be reported)

Chloride (compensation only)

The VARiON probe provides continuous ISE data to help control & optimize the wastewater process.



- Single- or dual- measurement of ammonium and nitrate; measurement of potassium or chloride for automatic compensation
- Individually, user-replaceable electrodes and reference
- VARiON reference system is very stable over long periods of time
- Electrodes are recognized automatically
- Factory calibrated with optional in-situ calibration for improved accuracy
- 2-year warranty on the probe, 1-year on electrodes

VARiON Plus 700 IQ Technical Specifications

Parameter	Measuring Range	Resolution	
NO ₃	.5 to 450.0 mg/L	0.5 mg/L	
	5 to 4500 mg/L	5 mg/L	
NO ₃ -N	0.1 to 100.0 mg/L	0.1 mg/L	
	1 to 1000 mg/L	1 mg/L	
mV (Nitrate)	-2000 to 2000 mV	1 mV	
NH ₄	0.1 to 129.0 mg/L	0.1 mg/L	
	1 to 1290 mg/L	1 mg/L	
NH ₄ -N	0.1 to 100.0 mg/L	0.1 mg/L	
	1 to 1000 mg/L	1 mg/L	
mV (Ammonium)	-2000 to 2000 mV	1 mV	
K	0.1 to 1000 mg/L	1 mg/L	
mV (Potassium)	-2000 to +2000 mV	0.1 mV	
Cl (compensation only)	0.1 to 1000 mg/L	1 mg/L	
mV (Chloride)	-2000 to 2000 mV	1 mV	
Temperature	-5 to 60 °C (23 to 140 °F)	0.1 °C	Accuracy=± 0.5 °K
Operating & Compensation Range Temperature	0 to 40 °C (32 to 104 °F)	Storage Temperature	0 to 40 °C (32 to 104 °F)
Warranty	2 years on probe, 12 months on electrode		
pH range	4 to 8.5 for Ammonium, 4 to 11 for Nitrate		
Dimensions	Length 392 mm (15.43 in); diameter 55 mm (2.17 in); weight (without sensor cable)~ 670 g (1.5 lbs)		
Certifications	CE, cETLus		
Protection Class	Sensor with SACIQ cable connected: IP68		
Pressure Resistance	0.2 bar (2.9 psi); maximum deployment depth = 2 meters		
Accuracy	Ammonium, Nitrate, Potassium, Chloride: ± 5% of measured value or ± 0.2 mg/L		
Electrical	Power Consumption: 0.2 W, Two wire shielded IQ cable provides power and communication		
Materials	Housing: Stainless Steel 1.4571, POM (for electrode material see product manual)		

VARiON Plus 700 Electrode Specifications

Electrode - NH₄, NO₃, K, Cl, Ref

Measured at 20° C (68° F) and concentration change of.. NH₄, Cl = 10 to 100 mg/L
NO₃, K = 5 to 50 mg/L

Response time T₉₀ < 3 min

VARiON Plus 700 IQ Sensor Ordering Information (must be used with the IQ SensorNet, sensor cable sold separately)

107040Y	VARiONPlus 700 IQ. Robust digital probe for the ion-selective measurement (in-situ) of ammonium and nitrate, for use with the IQ SensorNet system. Supplied with: Probe VARiONPlus 700 IQ with 4 blind plugs, guard and calibration vessel. Order electrodes separately.
107042Y	VARiON Ref. Reference electrode for mounting into VARiONPlus 700 IQ, NitraLyt Plus or AmmoLyt Plus probe.
107044Y	VARiON Plus NH ₄ . Ammonium electrode for VARiON Plus 700 IQ and AmmoLyt Plus, measuring range: 0.1 - 1000 mg/l NH ₄ -N.
107045Y	VARiON Plus NO ₃ . Nitrate electrode for VARiON Plus 700 IQ and NitraLyt Plus/NitraLyt, Measuring range: 0.1 - 1000 mg/l NO ₃ .
107046Y	VARiON Plus K. Potassium electrode for VARiON Plus 700 IQ and for AmmoLyt Plus, measuring range: 1 - 1000 mg/l K+.
107047Y	VARiON Plus Cl. Chloride electrode for VARiON Plus 700 IQ and for NitraLyt Plus, measuring range: 1-1000 mg/l Cl-.

Visit YSI.com/IQ for additional information on the entire IQ SensorNet system

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