

Orion Process Products Specifications



Orion 2111LL ionplus® Low Level Sodium

Markets:

- Power
- Semiconductor
- Chemical & Petrochemical
- Pulp & Paper

Applications:

- Ultra pure water analysis
- Boiler feed water
- Ion exchange breakthrough
- Steam Analysis
- R/O Systems
- Drum boiler water

Orion 2111LL Specifications:

Specifications		Specifications	
Sodium ISE		LED Status Indicator	
Range	0.001 ppb – 10 ppm	Green	OK
Resolution	1, 2, 3 or 4 significant digits	Yellow	Warning
Accuracy (w/DKA cal)	+/-5% or 0.01ppb, whichever is greater	Red	Failure
Accuracy (w/DKA cal & Offline cal)	+/-2.5% or 0.01ppb, whichever is greater (assuming "true" value from the reference)	Sample Conditions	
Precision	Std. Dev. +/-2.5% or 0.01ppb, whichever is greater	Temperature	5 to 45°C
Response Time	95% within 2 minutes: with freshly etched electrode.	Total acidity:	Less than 50 ppm CaCO ₃
Units Displayed	ppb, ppm	Inlet Pressure:	8 to 100 psig
Auto Temperature Compensation	YES	Flow Rate:	40 ml/min nominal set by pressure regulator
Averaging	Automatic	Sample Inlet	1/4" NPTF tube fitting
mV Measurement		Sample Outlet/Drain	3/4" NPT male
Range - mV	+/-1999.9	Grp Sampler	Optional
Resolution	0.1	Reagents	
Relative Accuracy	+/- (0.5 mV + 0.1%)	Di-isopropylamine	YES
Temperature Measurement		Display	
Range°C	-10 to 120 °C	Type	Backlit Custom LCD
Resolution°C	0.1	Size	54 x 76 mm (2 1/8 in x 3 in)
Relative Accuracy°C	+/- 0.5	Backlit	YES
Temperature Display	YES	Icons	YES
Manual Temperature Compensation	YES	(Top) Marquee	Temperature, User Prompts, Scrolling Instructions for Setup, Calibration and Diagnostics
Continuous Temperature Readings	YES	Middle	Concentration, Error Codes
ATC Probe	30K Thermister	Bottom	mV (Selectable)
Specific Ion Calibrations		User Input	
DKA Calibration	YES	Keypad	Tactile feedback
DKA Cal Points	3 points	Inputs	
Off-Line Calibration	YES	ATC	2100TP – 30K Thermistor
Off-Line Cal Points	1 point	Sodium Ion Input	ROSS Ultra® Sodium
Pre-programmed standard values	YES	Sodium Ion Reference	ROSS Ultra Reference
Custom Calibration	User programmable for concentration and volume		

Above data generated under optimal/controlled circumstances.

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US Patent 6,793,787

Orion 2111LL Specifications:

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Outputs		Meter Features	
Analog Output	YES - Galvanically Isolated	Non-volatile Memory	YES
# of Analog Outputs	2 (Shared Ground)	Battery Backup	YES
Output Selections	0 to 20mA, 4 to 20mA	Data logging	YES
Programmable range	YES	Expansion bus	Future options
Channel assignments	Sodium + Temperature	Waterproof enclosure	IP66 & NEMA 4X
Relative Accuracy	+/- (0.05 mA + 0.5%)	Miscellaneous	
Max. Load	500 ohm or 10 V	Graphics	Custom chemical resistant
Log & Linear output Options	YES, user selectable	Case Color	Grey
Alarm Outputs		Case Material	Valox 364
# of Relay outputs	3	Warranty	12 months from date of installation or 18 months from date of shipment, whichever is earlier
Max Relay Load	250VAC/5A, 30VDC/5A RES.	Service Policy	Field Service and Factory
Min. Value Alarm	YES	Manual	CD/web/customer printable
Max. Value Alarm	YES	Regulatory and Safety	CE, CSA-NRTL, UL, FCC Class A limits
Error Alarm	YES	Service Policy	Field Service and Factory
Offline/Cal Alarm	YES	Environmental Operating Conditions	
Programmable min & max values	YES	Waterproof Enclosure	IP66 & NEMA 4X
Physical Size of Monitor	65x45x27 cm (26x17x11 in) Fits on 1811EL panel mounting hardware footprint Weight 22.7 kg (50 lbs)	Overvoltage Category	II
Physical Size of Electronics Module	144x144x187 mm (5.67x5.67x7.36 in) Weight 1.7 kg (3.75 lbs)	Ambient Operating Temperature	5 to 45°C
Power		Relative Humidity	5 to 95% Non-Condensing
Power input	85 to 132V; 100mA or 170 to 264V; 200mA; 50 to 60 Hz AC	Pollution Degree	2
Over Voltage Category	II	Storage Temperature	-20 to 60°C
Software Features		Storage Humidity	5% to 95%, Non-Condensing
Self-Test & Diagnostics	YES	Shock and Vibration	
Real Time Clock	YES	Vibration, Shipping/Handling	0 - 60Hz @ 1 G Load
PCB serial number	YES	Shock, Drop Test in Packaging	36" on all sides and corners
Programmable alarms	High, Low, Error, Cal/Offline		
Reset Function	YES		

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