



**Data Acquisition Solution**

Next Wave Energy Monitoring ("NWEM") is a renewable energy performance monitoring & data acquisition platform designed by power quality engineers to deliver substantial energy vitals and system analytics to solar asset owners/managers. NWEM's turnkey Data Acquisition System ("DAS") extends a customer-first expectation focused on state-of-the-art manufacturing at our

California-based ISO-9001 facility, quality workmanship & hardware, and market-leading customer support and In-field Network Engineering from our US - Based teams to streamline system energization and DAS retrofit needs.



**Turnkey Solution**

**Hardware**

- ✓ Compliant with IRA Domestic Content Requirements
- ✓ Next Wave Industrial Datalogger
- ✓ Revenue-grade Energy Meter
- ✓ Metal NEMA4 Weatherproof Enclosure
- ✓ 4G/LTE, Ethernet, or High-Speed Fiber options
- ✓ Supplemental Battery + UPS Options
- ✓ Modbus Communication via RS-485 or TCP
- ✓ SCADA-Compatible Solution
- ✓ 5-year Material Warranty Included
- ✓ Non-Proprietary, Off-the-Shelf Components

**Software**

- ✓ Data granularity with ranges including 1 min/ 5 min/ 15 min/ 1hr/ 1 day/ 1 week/ 1 month/ 1 year/ Lifetime
- ✓ Cellular or Ethernet connectivity
- ✓ Full Support + Integration with NWEM **PVPulse™**
- ✓ Sun-Spec Alliance Certified
- ✓ VPN Access / Port Forwarding capabilities for secured remote access
- ✓ Automated Report Generation & Distribution
- ✓ Diagnostics-Level Charting and Metrics
- ✓ Intuitive & Flexible UX/UI Solution

**Next Wave PVPulse™  
Performance Monitoring**

Next Wave Energy Monitoring's **PVPulse™** is a renewable energy performance monitoring and data analytics platform with a mission



to simplify the high volume of data and focus on meaningful analytics which will lead to root-cause and will reduce the Mean Time to Repair (MTTR). **PVPulse™** intuitive DAS platform is geared towards commercial & industrial, enterprise/portfolio, and utility-scale applications, offering anomaly detection, performance trending, plant or fleet-level interface/data, and troubleshooting capabilities while aggregating data from all interactive equipment and translating it into meaningful power and energy vitals for both highly technical and non-technical end-users. Next Wave Energy Monitoring is certified & compliant with requirements of ISO/IEC 27001:2022 Information Security Management Systems.





<b>Assembly</b>	Weight	160 lb.   72.6 kg.
	Operating Temperature	-40°F to 122°F / -40°C to 50°C
	Line Input Voltage Range	100 – 250 VAC
	Frequency	50Hz / 60Hz
	Standards / Compliance	UL Listed 508A Type 4, RoHs Compliant, cUL Listed per CSA C22.2 No. 94.1, 94.2, 14 / IEC 62208 / ISO9001 (2008)
<b>Enclosure</b>	Enclosure Dimensions	30" x 30" x 12"    760mm x 760mm x 300mm
	Enclosure Rating	NEMA 4
	Weight	92.6 lb.   42 kg
	Base Material	Carbon Steel
	Standards / Compliance	UL/cUL Type 1, 3R, 12, 4 (4X stainless steel) UL 508A, CSA-C22.2 No. 14, "Industrial Control Equipment."
<b>Data Logger</b>	Interval Recording	1 to 60 minutes, user selectable (default 15 minutes)
	Processor / OS / Memory	i.MX 6UltraLite / Linux 4.x / x512 MB RAM
	Storage	4GB NOR Flash
	Devices Supported	Up to 64 connected Modbus RTU enabled devices
	Primary Protocols	Modbus/RTU, Modbus/TCP, TCP/IP, PPP, HTTP/HTML, FTP, NTP, XML, SNMP-Trap
	Serial Ports	2 x RS-485 Modbus, supports 32 external devices per port
	LAN	2 x RJ45 10/100 Ethernet, full half duplex, auto polarity
	Interval Recording	1 to 60 minutes, user selectable (default 15 minutes)
<b>Revenue Grade Energy Meter</b>	Modbus/RTU Output	RS-485 2-wire, 9600 to 230400 baud
	BACnet MS/TP Output	RS-485 2-wire, 9600 to 115200 baud
	Relay	2x Solid-State Relay Outputs (100mA @ 50V max), User Programmable for alarm, status or pulse output
	Accuracy	0.2% Max
	Standards / Compliance	ANSI C12.20 Class 0.2 Accuracy Certified / FCC Part 15 Class B, UL Listed #E250395
<b>Cellular Modem</b>	WAN Interface	1 x Embedded LTE Modem with Redundant SIM Slot
	LAN Interface	2 x 10/100/1000 M Ethernet Port
	Router Throughput	300 Mbps
	Load Balancing	Intelligent Failover, Session Persistence, Per-Service Load Distribution, Multiple Algorithms
	Networking	NAT and IP Forwarding, Static Routes, Port Forwarding, UPnP, NAT-PMP
	Security	128-bit WEP, WPA, & WPA2, Stateful Firewall, DoS Prevention, Web Blocking
	Standards / Compliance	FCC, CE, IC, RoHs, E-Mark, EN 61373, EN50155, EN61000





<b>Fiber/Ethernet Switch</b>	Transfer Rate	14,880pps for Ethernet Port   148,800pps for Fast Ethernet Port 1,488,000pps for Gigabit Ethernet Port
	Ethernet Port	8 * 10/100Tx RJ45 ports, auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
	Gigabit Combo Port (Copper/SFP)	2 * 10/100/1000Tx RJ45 Ports & 2 * 100/1000 SFP Slot
	Processing Type	Store and Forward
	Standards / Compliance	IEEE 802.3 10Tx Ethernet, 802.3u 100Tx Fast Ethernet, 802.3ab 1000Tx Gigabit Ethernet, 802.3z Gigabit Fiber
<b>Power Supply</b>	Dimensions	2" x 5.1" x 4.9"   50mm x 130mm x 125mm
	Weight	2lb.   0.9 kg
	AC Input Voltage Range	100 VAC ... 240 VAC
	Input Frequency Range	50Hz ... 60Hz
	DC Output Voltage   Current	24 VDC   10A
Standards / Compliance	UL Listed UL 508, UL/cUL 60950-1	
<b>UPS</b>	Dimensions	1.4" x 5.1" x 4.9"   35mm x 130mm x 125mm
	Input Voltage   Voltage Range	24 VDC   18VDC ... 30 VDC
	Output Voltage Range	18 VDC   30 VDC
	Interface Designation   # of Interfaces	Ethernet/IP™   2
	Supported Protocols	Ethernet/IP™ (Explicit Messaging, Implicit Messaging), BootP, DHCP, DLR
	Connection Method	RJ45 socket
	Standards / Compliance	EN 61000-6-1/2/3/4, EN 60950-1, EN 50121-4, UL Listed UL 508, UL/C-UL Recognized UL 60950-1
<b>UPS Battery Pack</b>	Dimensions	7.8" x 6.5" x 6.7"   197mm x 165mm x 171mm
	Weight	31.53 lb.   14.30 kg
	Nominal Voltage	12 V
	Nominal Capacity	40Ah @ 20 hour rate F.V. (1.75V/cell)
	Max. Discharge Current	≤ 8m Ω (Fully Charged)
	Max. Charge Current	12 A
<b>RS485 Surge Protection Device</b>	Dimensions	0.7" x 3.5" x 2.7"   18mm x 90mm x 68mm
	Max. Load Current	300 mA
	Impulse Current	5 kA
	Nominal Discharge Current	5 kA
	Volts   Wires	24 V   4W + SHIELD + GROUND
Standards / Compliance	UL 497B, QVGQ, File Number E194939, IEC 61643-11, NOM-003-SCFI-2014, NOM-001-SCFI-1993	
<b>Ethernet Surge Protection Device</b>	Dimensions	1.3" x 2.2" x 2.2"   34mm x 55mm x 55mm
	Impulse Current	500 A
	Nominal DC Line Voltage	5 VDC
	Max. DC Line Voltage	8 VDC
	Wires   Protection Level	8W + SHIELD + GROUND
Line Current Max	1 A	





<b>6A Circuit Breaker 13A Circuit Breaker</b>	Dimensions	4.4" x 2.7" x 0.7"   111mm x 69mm x 17.5mm
	Poles	1P
	6A / 13A Rated Current I <sub>n</sub>	6 A   13 A
	Rated Frequency f	50 / 60 Hz, DC (0 Hz)
	Rated Insulation Voltage U <sub>i</sub>	250 VAC (phase to ground), 440 VAC (phase to phase)
Standards / Compliance		UL 489, CSA 22.2 No. 5, IEC/EN 60947-2
<b>5A Fuse</b>	Dimensions	0.21" x 0.79" x 0.21"   5.2mm x 20.0mm x 5.2mm
	Voltage Rating AC	250 VAC
	Current Rating	5 A
	Interrupt Rating	50 A at 250 VAC
	Standards / Compliance	cURus, CSA, CCC, BSI, VDE, SEMKO, IMQ
<b>DC POE Injector</b>	Dimensions	1.2" x 5.5" x 3.7"   30mm x 140mm x 95mm
	Power Input	24 / 48 VDC
	Power Consumption	33.36 W @ 24 VDC
	Connector	10/100/1000 BaseT(X) x 2 (Data IN x 1, PoE OUT x 1)
	Standards / Compliance	UL-508, IEEE 802.3 10BaseT, 802.3u 100BaseT, 802.3ab 1000BaseT(X), 802.3af/at Power over Ethernet
<b>Transceiver (LC Connector)</b>	Dimensions	0.5" x 2.2" x 0.3"   13.7mm x 56.5mm x 8.9mm
	Interface	LC (Single-Mode)
	Sensitivity	-32 dBm
	Distance	20 KM
	LD Type & Wavelength	1310 nm FP
	Data Rate	155 Mbps, NRZ
	Standards / Compliance	MSA / SFP, IEEE 802.3u 100Base-FX, FDDI PMD Standard, ATM Standard
	Standards / Compliance	
<b>Fiber Patch Panel</b>	Dimensions	6.5" x 6.0" x 1.5"   165.1mm x 152.4mm x 38.1mm
	Product / Mounting Type	Wall-Mountable   Wall-Mountable Hardware
	Housing Type	SPH
	# of Panels per Housing	1
	Panel or Module Type	CCH
	Standards / Compliance	RoHS 2011/65/EU
<b>Closet Connector Housing Panel</b>	Dimensions	6.1" x 1.4" x 1.4"   155.4mm x 34.8mm x 36.1mm
	Fiber Category	Single-mode (OS2)
	Fiber Count	12
	# of Adapters per Panel	6
	Housing Type	Panels and Modules
	Adapter Type	LC Duplex
	Standards / Compliance	RoHS 2011/65/EU

