

PLW Series of High-power Programmable

Why Choose the PLW Series?

Traditional Water-cooled dc Electronic Load Solutions are bulky, have limited power handling capability, and are prone to water cooling issues such as condensation and external water valve considerations. Furthermore, only standard voltage, current and power ratings are offered. Rack space, reliability, and the right-solution fit are key parameters for lights-out burn-in of power components, fuel cells, batteries, power supplies, alternators and other electronics.

AMREL's PLW Series of "Water-cooled" dc Electronic eLoads are capable of being custom-tailored to meet your specific application requirements. The PLW Series also offers a unique condensation protection design, the highest power density and current rating, as well as the widest selection of high-voltage models on the market.

Markets and Applications:

- Battery/Energy Storage/Ultra Capacitor Testing and Validation
- Fuel Cell Durability, Lifetime and Performance Characterization
- dc Power Supply and Battery Charger Validation and Testing
- Single Cell and Short Stack Fuel Cell Characterization
- EIS/Impedance Measurement
- Defense/Aerospace and Avionics ATE, Electronics and Power Sources Testing
- Thin-film, Single- & Poly-silicone PV Design Validation and Testing
- Power Supply, Power Electronics/Components Validation and Testing
- Industrial Applications: Generator/Alternator, UPS/Battery Banks, Datacenter Backup Power, and Automotive Power Electronics & Components
- Lab/Bench-top Applications: Ideal for R&D, Testing and QC Engineers
- Power Electronics/Components, dc Distribution & dc-dc Converters
- Universities
- National Research Labs



PLW SELECTOR GUIDE

PLW XXX - YY - ZZZ - OPTION*
XXX - POWER | YY - VOLTAGE | ZZZ - CURRENT

I=Isolated Analog Programming Option*
R=Isolation Relay Option*

Series	Model #	Power (W)	Voltage (Vdc)	Current (Adc)	V _{MIN} at I _{MAX}	Size (Height, Depth)
PLW	PLW6K-60-1000	6kW	60	1000	0.6V	2U, 27.5"D
PLW	PLW6K-120-600	6kW	120	600	1.5V	2U, 27.5"D
PLW	PLW6K-400-300	6kW	400	300	3.6V	2U, 27.5"D
PLW	PLW6K-600-200	6kW	600	200	12V	2U, 27.5"D
PLW	PLW9K-60-1500	9kW	60	1500	0.6V	2U, 27.5"D
PLW	PLW9K-120-1000	9kW	120	1000	1.5V	2U, 27.5"D
PLW	PLW9K-400-400	9kW	400	400	3.6V	2U, 27.5"D
PLW	PLW9K-600-300	9kW	600	300	12V	2U, 27.5"D
PLW	PLW12K-60-1500	12kW	60	1500	0.6V	2U, 27.5"D
PLW	PLW12K-120-1200	12kW	120	1200	1.5V	2U, 27.5"D
PLW	PLW12K-400-600	12kW	400	600	3.6V	2U, 27.5"D
PLW	PLW12K-600-400	12kW	600	400	12V	2U, 27.5"D
PLW	PLW18K-60-1500	18kW	60	1500	0.6V	2U, 27.5"D
PLW	PLW18K-120-1500	18kW	120	1500	1.5V	2U, 27.5"D
PLW	PLW18K-400-800	18kW	400	800	3.6V	2U, 27.5"D
PLW	PLW18K-600-600	18kW	600	600	12V	4U, 27.5"D
PLW	PLW24K-60-1500	24kW	60	1500	0.45V	4U, 27.5"D
PLW	PLW24K-120-1500	24kW	120	1500	1.2V	4U, 27.5"D
PLW	PLW24K-400-1200	24kW	400	1200	3.6V	4U, 27.5"D
PLW	PLW24K-600-800	24kW	600	800	12V	4U, 27.5"D
PLW	PLW36K-60-1500	36kW	60	1500	0.45V	4U, 27.5"D
PLW	PLW36K-120-1500	36kW	120	1500	0.9V	4U, 27.5"D
PLW	PLW36K-400-1500	36kW	400	1500	3.3V	4U, 27.5"D
PLW	PLW36K-600-1000	36kW	600	1000	10V	6U, 27.5"D

Additional standard models above 36kW and up to 250kW+ are available. Please contact AMREL for more details.

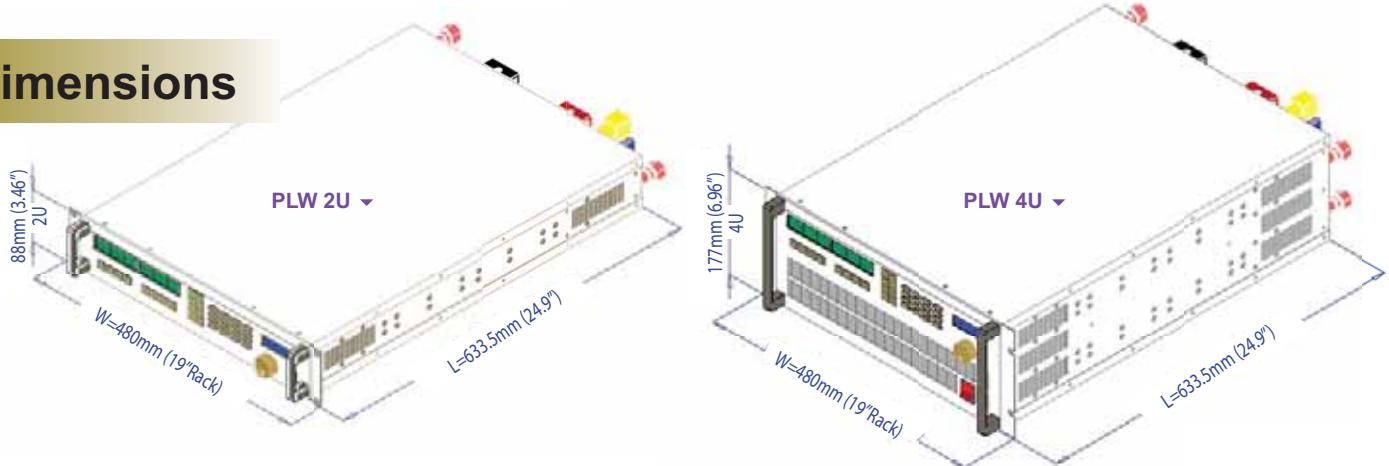
Voltage Range: 10Vdc~1200Vdc Rating
Current Range: 10Adc ~ 5000Adc Rating
Power Range: 6kW ~ 100kW+ Rating
Custom-tailored Ranges Available

EFU-L = Field Upgradeable Ethernet & USB Available

Key Features and Benefits:

- **Broadest Model Selection:** 6kW, 9kW, 12kW, 18kW, 24kW, 36kW, 48kW, 60kW, 75kW, 100kW, 120kW Models and Higher Power PLW Systems in Excess of 250kW
- **Exclusive High-voltage Models:** Standard 60V, 120V, 400V & 600V Voltage Ratings and Widest Selection of Exclusive 800Vdc and 1200Vdc PLW Models
- **Save Rack Space:** PLW Models Offer Ultra-Compact Footprint and Boasts the Industry's Highest Power Density
- **Maximize ROI:** In-rack Closed-case Calibration Without "Outside" Calibration Lab
- **Ultra-low Compliance Voltage:** Ultra-low Voltage Operation @ 1000's of Amps (5000Adc)
- **Reliable:** Individual FET Protection to Isolate Power Stage Failures
- **Maximized Uptime:** Redundant Over-temperature and Over-power Protection
- **Anti-condensation:** Intelligent Fully-Integrated Temperature Control Circuit and Solenoid Valve Control Prevent Condensation
- **Fast Response:** 50µs Independently Programmable Rise/Fall Time
- **Flexible Test Platform:** Five Modes of Operation: CC, CR, CV, CP and Pulse Load Shaping
- **Intuitive Front Panel Control:** User-friendly Function Hot Keys, Full Keypad & Digital Encoder
- **Integrated DMM:** 14-bit 5-digit Voltage and Current Measurement Display
- **Two Loads in One:** Ultra-low Current Range Option for Optimized Accuracy
- **More Ranges:** Three Full Scale Ranges (100%, 50% & 10%)
- **More Protections:** Anti-oscillation & Programmable Protections: OV, UV, OC, UC, OP, & UP
- **More Interfaces:** Co-resident GPIB/RS-232 and Optional Field-upgradeable Ethernet/USB
- **ATE Ready:** Standard LabWindows and LabVIEW Drivers and SCPI Command Set
- **Test Automation Ready:** Four Profiles; 32 Step Points per Profile
- **Fuel Cell Application Ready:**
 - Impedance Measurement via Frequency Response Analyzer (FRA)
 - Current Interruption Mode for Fuel Cell Testing
 - Ultra-low Compliance (0.1Vdc) Voltage to Operate at High Current
 - Virtual Panel provides Polarization Curve Sweep and Voltage/Current Cycling Capability
- **0 ~ 10Vdc PLC or DAQ Control Ready:**
 - 0~10Vdc External Analog Programming
 - External On/Off Control
 - External Mode Selection
 - Front Panel Key Lockout Prevents Unwanted Key Entry
- **More System Integration Features & Options:**
 - Standard Remote Inhibit (RI) for Interlock Capability
 - Standard Dry Contact Fault for Redundant System Protection
 - Isolated Analog Control/Monitor Option
 - External dc Contactor Option
 - Reverse Polarity/Isolation Relay Option
- **Battery Testing:** "C" Operand for Battery Testing.
- **Ideal for Unique Test Applications:** Custom-tailored Ratings & Features Available

Dimensions



PLW SPECIFICATIONS

CV MODE SPECIFICATIONS		CC MODE SPECIFICATIONS	
CVL RANGE	0 ~ 10% of Vmax	CCL RANGE	0 ~ 10% of Imax
CVM RANGE	0 ~ 50% of Vmax	CCM RANGE	0 ~ 50% of Imax
CVH RANGE	0 ~ 100% of Vmax	CCH RANGE	0 ~ 100% of Imax
ACCURACY	0.05% of Value ± 0.1% of Rating	ACCURACY	0.05% of Value ± 0.1% of Rating
RESOLUTION	1/16000 of Rated Voltage	RESOLUTION	1/16000 of Rated Voltage
TRANSIENT TIME (SLOW)	0.500 ~ 511.9 (ms)	TRANSIENT TIME (SLOW)	0.500 ~ 511.9 (ms)
TRANSIENT TIME (FAST)	0.500 ~ 51.19 (ms)	TRANSIENT TIME (FAST)	0.050 ~ 51.19 (ms)
CR and CP MODE SPECIFICATIONS		PROTECTION	
Please reference website datasheet for details		OVER POWER PROTECTION	105% * Pmax
		OVER VOLTAGE PROTECTION	105% * Vmax
		OVER CURRENT PROTECTION	110% * Imax
		OVER TEMPERATURE PROTECTION	50°C ± 5°C
		REVERSE MAXIMUM CURRENT	110% of Imax
		REMOTE INHIBIT (RI)	Short
		FAULT INDICATOR	SPDT Relay
		Other Programmable Protections: OPP, OVP, OCP, UVL & Anti-Oscillation	
GENERAL SPECIFICATIONS		DIELECTRIC STRENGTH	
REMOTE INTERFACES	RS-232, GPIB & USB/Ethernet	PRIMARY CIRCUIT TO CHASSIS	1500Vac for 1 Minute
ANALOG PROGRAMMING	0 ~ 10Vdc	PRIMARY CIRCUIT TO LOAD TERMINAL	1500Vac for 1 Minute
ACCURACY	Mode Accuracy ± 0.1% of Rating	LOAD TERMINAL TO CHASSIS	1500Vdc for 1 Minute
VMON ACCURACY	0.10% of RDG ± 0.1% of Rating		
IMON ACCURACY	0.10% of RDG ± 0.1% of Rating		
FREQUENCY RANGE	0.1Hz ~ 10kHz		
DUTY RANGE	1.000 ~ 100.0%		
FREQUENCY & DUTY ACCURACY	0.1% of Setting		
AC INPUT	95 ~ 240Vac / 48 ~ 62Hz		
OPERATING TEMPERATURE	5°C ~ 40°C		