

# CW Series

## 800-2500VA PROGRAMMABLE AC POWER SERIES

### Features

- Three phase operation
- High frequency output
- Advance measurement capability (CWP only)
- Wide AC input range
- Excellent output stability



### Product Overview

The Continuous Wave (CW) series of AC power sources provides clean single phase power at an impressive price/performance ratio. These compact switch mode sources come in two series, manual (CW-M) or programmable (CW-P) with standard IEEE-488.2 and RS232 control. Both series have three power levels, 800VA, 1250VA and 2500VA. The 800 and 1250VA models are 2RU high and allow the unit under test to be connected to the front or rear panel. The 2500VA model is 3RU high with rear panel output connections. All models can be operated in a bench-top or rack-mount configuration.

The front panels have two bright four digit, seven segment displays. Power Factors Corrected (PFC) universal input voltage allows maximum to be delivered from an AC outlet without user selecting the range. Fully rated current is delivered for either output voltage range of 135VAC or 270VAC over a standard frequency range of 45-500Hz. Custom output voltage are available (consult Powerbox for details). Both series can be operated in parallel or three phase configurations.

A separate output on/off switch controls power to the load. Remote voltage sense is standard. Transformer coupled output is protected against over-voltage and over-current. The unit is also protected against over-temperature conditions. A two-speed fan results in quieter operation at lower power levels. All models are CE marked.

### Product Applications

The Continuous Wave is designed for testing single or poly-phase electronics. The CW is well suited for applications requiring a cost-effective low profile AC source.

#### APPLICATION INCLUDE:

- Testing for real world sine wave power conditions
- 400Hz testing for avionics equipment (50/60Hz margin testing)
- Ballast testing (Components testing)
- Power supply testing for AC to DC converters

### Manual CW Features and Benefits

The manual series front panel knobs (10 turn potentiometers) allow quick adjustment of voltage, current and frequency settings. Frequency and voltage can be programmed remotely using a 0-5V analog signal. LED's indicate: output-on, voltage or current mode operation, fault and slave modes. Models can also be paralleled in the field or configured for three phase operation using factory supplied optional cables. Current shutdown or fold-back modes can be selected from rear panel switch.

### Programmable CW Features and Benefits

Front panel encoder knobs allow programming of voltage, current and frequency settings. Programmed or measured values can be viewed on the two LED displays through push button selection. Menu push buttons enable setting system configuration including parallel or three phase operations. This menu also allows setting current shutdown of fold-back modes. Remote IEEE-488.2 and RS232 control interfaces are standard. LEDs indicate high and low range output voltage, measure a program mode, voltage a current mode generation and output on. Also indicate menu/status, remote control, lockout and fault conditions. Digital Signal Processing (DSP) based measurements include voltage, current (amperes, peak amperes, crest factors), power (watts, VA and power factor) and frequency.

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CW SPECIFICATIONS	MANUAL (M)	PROGRAMMABLE (P)
GENERAL		
<b>REGULATORY COMPLIANCE</b>		CE mark
<b>DIMENSIONS</b>		
CW 801 and CW 1251	2RU 89mm (H) x 483mm (W) x 524mm (D)	
CW 2501	3RU 133mm (H) x 483mm (W) x 524mm (D)	
<b>WEIGHT</b>		
CW 801		22kg
CW 1251		24kg
CW 2501		39kg
<b>SHIPPING WEIGHT</b>		
CW 801		25kg
CW 1251		28kg
CW 2501		43kg
<b>ENVIRONMENTAL</b>		
Cooling	Dual speed fan with side air intake, exhaust to rear	
Operating Temperature	0 to 40 °C	
Storage Temperature	-40°C to +70 °C	
Humidity	0 to 85% at 25 °C de-rate to 50% at 40 °C (non condensing)	
Altitude	Operating full power available up to 6,000 feet, non operating to 40,000 feet	

### ORDERING INFORMATION

MODEL NUMBER	OUTPUT (SINGLE PHASE)			INPUT (SINGLE PHASE)
	MAXIMUM POWER	MAXIMUM CURRENT		VOLTAGE (47-63HZ)
		135V	270V	
<b>CW-Manual</b>				
CW 801M	800VA	6.0A	3.0A	90 to 264VAC
CW 1251M	1250VA	9.4A	4.7A	103 to 264VAC
CW 2501M	2500VA	18.6A	9.3A	180 to 264VAC
<b>CW-Programmable</b>				
CW 801P	800VA	6.0A	3.0A	90 to 264VAC
CW 1251P	1250VA	9.4A	4.7A	103 to 264VAC
CW 2501P	2500VA	18.6A	9.3A	180 to 264VAC

### Options and Accessories

- H:** Expanded frequency range 45 to 1000Hz (CW-P only)
- L:** Locking shafts (front panel potentiometers) (CW-M only)
- S:** Sync In/Out (clock/lock) (standard on CW-P)
- V:** Extended voltage range 0-155V, 0-310V (CW-P only)

#### RACK SLIDE KIT

Part No. K16570-01

#### MULTI-UNIT CABLE

Part No. 890-497-40

Required for parallel and paralalled polyphase CW-M and CW-P systems.

#### DIGITAL EXPANSION CABLE

Part No. 890-499-00 (CW-P only)

Required for parallel and paralalled polyphase CW-P systems.

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<b>CW SPECIFICATIONS</b>	<b>MANUALS (M)</b>	<b>PROGRAMMABLE (P)</b>
Peak Current*Range CW 801		0 to 25A
CW 1251		0 to 35A
CW 2501		0 to 70A
Accuracy		+/-2% of range
Resolution		0.1A
<b>FREQUENCY</b>		
Range	45 to 500Hz (45-1000Hz optional on programmable unit only)	
Accuracy	+/-0.5% of reading	+/-0.02% of value
Resolution of display	0.1Hz	
<b>POWER*</b>		
Range		
CW 801		0 to 800W
CW 1251		0 to 1250W
CW 2501		0 to 2500W
Accuracy		+/-2% of range for linear loads
Resolution		1 W
<b>APPARENT POWER*</b>		
Range		
CW 801		0 to 800 VA
CW 1251		0 to 1250 VA
CW 2501		0 to 2500 VA
Accuracy		+/- 2% of range for linear loads
Resolution		1 VA
<b>POWER FACTORS*</b>		
Range		0 to 1
Accuracy		+/- 4 % of range for linear
Resolution		0.01
<b>CREST FACTORS*</b>		
Range		0 to 3.5
Accuracy		+/-5% of range
Resolution		0.01
<b>FRONT PANEL</b>		
<b>DISPLAYS &amp; INDICATORS</b>		
Menu/ Status	Green LED for output on, V mode, I mode, slave Red LED for Fault	Green LED's for remote and lockout, voltage mode, current mode, red LED for fault Enter/escape buttons are present for programming
Voltage	4 digit display, green LED (volts)	4 digit display green LED (volts, watts, VA, PF, OVP)
Current/ Frequency	4 digit display, green LED (amperes)	4 digit display green LED (amps, Hz, Pk amps, CF, I limit)
Program/Measure		Green LED (amps, HZ, I limit)
V Range High/Low		Green LED
<b>INPUT</b>		
<b>VOLTAGE AND FREQUENCY</b>		
CW 801	90 to 264VAC, 47 to 63Hz, single-phase	
CW 1251	103 to 264VAC, 47 to 63Hz, single-phase	
CW 2501	180 to 264VAC, 47 to 63Hz, single-phase	
<b>CURRENT</b>		
CW 801	13 ARMS max	
CW 1251	18.5 ARMS max	
CW 2501	19.5 ARMS max	
Power Factor	> 0.99 typical at full load nominal line	
Efficiency	> 73% typical at full load	
Note: In a parallel system, the current/power displayed in the master unit is the sum of all units in the system.		

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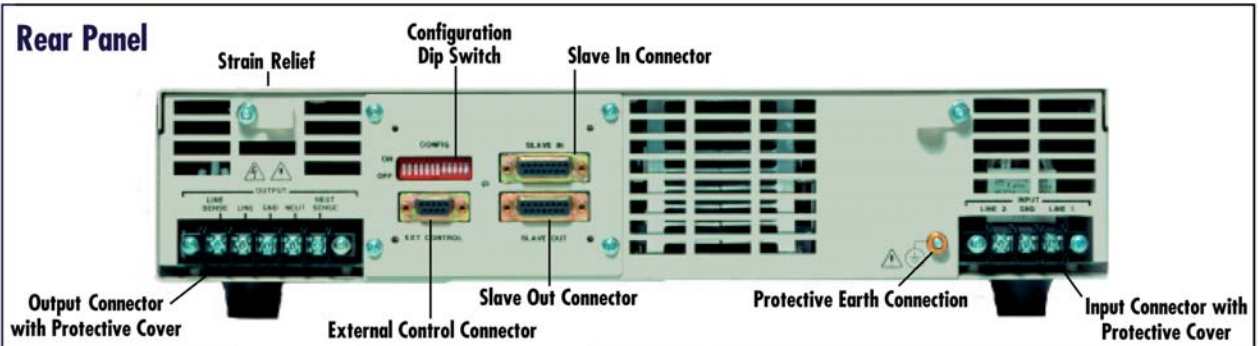
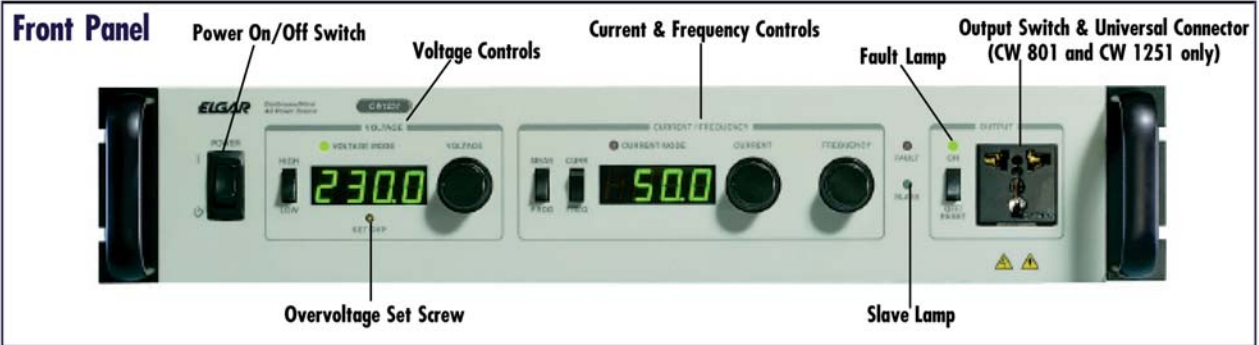
CW SPECIFICATION	MANUAL (M)	PROGRAMMABLE (P)
<b>OUTPUT</b>		
<b>POWER</b>		
CW 801		800VA
CW 1251		1250VA
CW 2501		2500VA
Power factor of load		0 lag to 0 lead
Phase		All models single phase output
<b>VOLTAGE</b>		
Ranges	0-135VRMS or 0 to 275VRMS, user selectable (consult factory for custom output voltages)	
Accuracy	+/-1% of range (> 5VAC out)	+/-0.1% of range < 100Hz, +/-0.2% of range,> 100Hz (>5 VAC out)
Resolution	0.1VRMS	
Total harmonic distortion	0.25% typical < 100Hz add 0.5%/100Hz above 100Hz	
AC noise level	< 50 mVRMS typical for CW801 & CW1251, 100 mVRMS typical for CW2501	
Amplitude stability	+/-0.1% of full scale over 8 hours at constant line, load and temperature after 15 minute warm-up typical	+/-0.05% of full scale over 8 hours at constant line, load and temperature after 15 minutes warm-up typical
Load regulation	+/-0.1% of full scale voltage for a full resistive load to no load (<10 mVRMS typical, measured at point of sense)	
Line regulation	+/-0.1% of full scale voltage for a +/-10% line change from nominal line voltage (<5 mVRMS typical, measured at point of sense)	
Remote voltage sense	Compensation for up to 5 VRMS total lead voltage drop	
<b>CURRENT</b>		
CW 801	6.0 ARMS in 135VAC range or 3.0 ARMS in 270 VAC range	
CW 1251	9.4 ARMS in 135VAC range or 4.7 ARMS in 270VAC range	
CW 2501	18.6 ARMS in 135VAC range or 9.3 ARMS in 270VAC range	
Accuracy	+/-0.5% typical	+/-0.6% max
Resolution	0.1 ARMS	0.01 ARMS
<b>FREQUENCY</b>		
Range	45 to 500Hz(45 to 1000Hz optional on programmable unit only)	
Accuracy	+/-0.5% typical	+/-0.02% max
Resolution	0.1Hz	0.1Hz, 0.01Hz for remote programming
<b>PHASE ANGLE</b>		
Range	-359 to +359 degrees. Positive phase indicates time lag from reference	
Accuracy	Within 100 microseconds of equivalent angle	
Resolution	1 degree	
<b>MEASUREMENT</b>		
Voltage range	0-270 VRMS	
Accuracy	+/-1% of full range for voltage (>5VAC out), measured at point of sense	+/-0.1% of range < 100Hz, +/-0.2% of range >100Hz, measured at point of sense (> 5VAC out)
Resolution	0.1 VRMS	
Current*		
Range		
CW 801	0 to 6.0 ARMS	
CW 1251	0 to 9.4ARMS	
CW 2501	0 to 18.6ARMS	
Accuracy	+/-2% of range for linear loads with current 0.2A for 800VA & 1200VA, 0.4A for 2500VA	+/-0.6% of range for linear loads with current 0.2A for 800VA & 1200VA, 0.4A for 2500VA
Resolution	0.1ARMS	0.01 ARMS

Note: In a parallel system, the current/power displayed in the master unit is the sum of all units in the system.

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Technical Illustrations  
**CW MANUAL**



**CW PROGRAMMABLE**

