ContinuousWave Series

CW Applications

The Continuous Wave Series of AC power sources provides clean single phase power at an impressive price/performance ratio. It is designed for testing single or polyphase electronics and has extensive programming features.

Programmable AC Power Sources

The ContinuousWave (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 RS 232 control. Both the manual and programmable models can be field configured for three phase operation or used in parallel (including parallel - three phase) with optional factory supplied cables. Both series have three power levels, 800 VA, 1250 VA and 2500 A. The 800 VA and 1250 VA models are 2U (3.5") high and allow the unit under test to be connected to the front or rear panel. The 2500 VA model is 3U (5.25") high with rear panel output connections. All models can be operated in a benchtop or rackmount configuration.

The front panels have two bright four digit, seven segment displays. The Power Factor Corrected (PFC) universal input voltage allows maximum power to be delivered from an AC outlet without the user selecting the range. Fully rated current is delivered for either output voltage range of 135 VAC or 270 VAC over a standard frequency range of 45 to 500 Hz (45 to 1000 Hz with option H, CW-P only). Custom output voltages are available (consult factory for details).

A separate output-on/off switch controls power to the load. Remote voltage sense is standard. Transformer coupled output is protected against overvoltage 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 have the CE Mark. UL Models available.

Key Features:

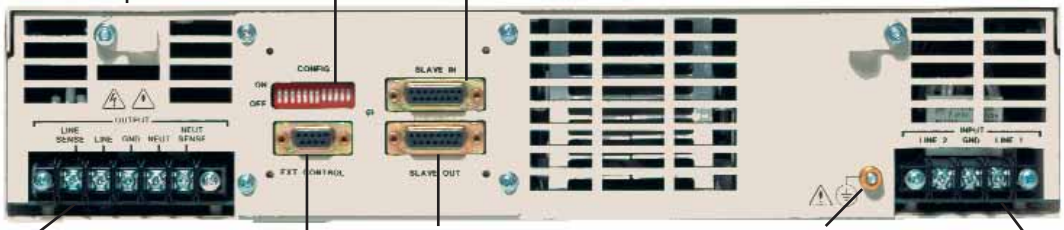
- **Three phase operation**
  Easily slaved for 3 phase output
- **High frequency output**
  45 to 500 Hz standard
  45 to 1000 Hz available
- **Advanced measurement capability (CWP only)**
  Peak amps
  Crest factor
  Watts & VA
  Power factor
- **Wide AC input range**
  Power factor >.99
  90 VAC to 264 VAC on CW801
  103 VAC to 264 VAC on CW1251
  180 VAC to 264 VAC on CW 2501
- **Excellent Output stability**
  +/-0.05% of full scale

ELGAR
Powerful Solutions

CW Manual

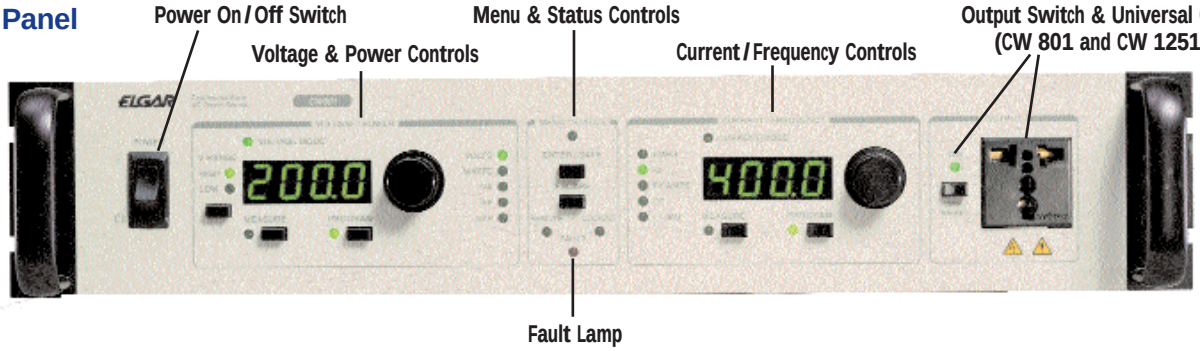
Front Panel

Rear Panel

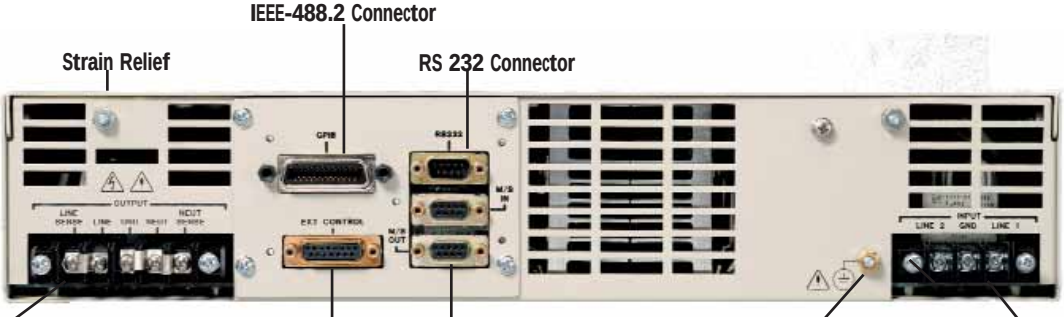


CW Programmable

Front Panel



Rear Panel



Manual CW Features

The manual series front panel knobs (10 turn potentiometers) allow quick adjustment of voltage, current and frequency settings. Frequency and voltage can also be programmed remotely using a 0 to 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 an optional factory supplied cable. Current shutdown or foldback modes can be selected from a rear panel switch.

Programmable CW Features

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 operation. This menu also allows setting current shutdown or foldback modes. Remote IEEE-488.2 and RS 232 control interfaces are standard. LED's indicate: high or low range output voltage, measure or program mode, voltage or current mode operation and output-on. LED's indicate menu/status, remote control, lockout and fault conditions. Digital Signal Processing (DSP) based measurements include voltage, current (amperes, peak amperes, crest factor), power (watts, VA and power factor) and frequency.

CW Specifications	Manual (M)	Programmable (P)
OUTPUT		
Power		
CW 801	800 VA	
CW 1251	1250 VA	
CW 2501	2500 VA	
Power factor of load	0 lag to 0 lead	
Phase	All models single phase output	
Voltage		
Ranges	0 to 135 VRMS or 0 to 270 VRMS, user selectable (consult factory for custom output voltages)	
Accuracy	±1% of range (>5 VAC out)	±0.1% of range <100 Hz, ±0.2% of range, >100 Hz (>5 VAC out)
Resolution	0.1 VRMS	
Total Harmonic Distortion	0.25% typical <100 Hz add 0.5%/100 Hz above 100 Hz	
AC Noise Level	<50 mVRMS typical for CW 801 & CW 1251, <100 mVRMS typical for CW 2501	
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 minute 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	
Current		
CW 801	6.0 ARMS in 135 VAC range or 3.0 ARMS in 270 VAC range	
CW 1251	9.4 ARMS in 135 VAC range or 4.7 ARMS in 270 VAC range	
CW 2501	18.6 ARMS in 135 VAC range or 9.3 ARMS in 270 VAC range	
Accuracy	±0.5% typical	±0.6% max
Resolution	0.1 ARMS	0.01 ARMS
Frequency		
Range	45 to 500 Hz (45 to 1000 Hz optional on programmable unit only)	
Accuracy	±0.5% typical	±0.02% max
Resolution	0.1 Hz	0.1 Hz, 0.01 Hz for remote programming

CW Specifications	Manual (M)	Programmable (P)
Phase Angle		
Range		-359 to +359 degrees. Positive phase indicates time lag from reference
Accuracy		within 100 microseconds of equivalent angle
Resolution		1 degree
MEASUREMENT		
Voltage		
Range	0 to 270 VRMS	
Accuracy	±1% of range (>5 VAC out), measured at point of sense	±0.1% of range <100 Hz, ±0.2% of range >100 Hz, measured at point of sense (>5 VAC out)
Resolution	0.1 VRMS	
Current*		
Range		
CW 801	0 to 6.0 ARMS	
CW 1251	0 to 9.4 ARMS	
CW 2501	0 to 18.6 ARMS	
Accuracy	±2% of range for linear loads with current 0.2A for 800 VA & 1200 VA, 0.4A for 2500 VA	±0.6% of range for linear loads with current 0.2A for 800 VA & 1200 VA, 0.4A for 2500 VA
Resolution	0.1 ARMS	0.01 ARMS
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
Frequency		
Range	45 to 500 Hz (45 to 1000 Hz optional on programmable unit only)	
Accuracy	±0.5% of reading	±0.02% of value
Resolution of display	0.1 Hz	
Power*		
Range		
CW 801		0 to 800W
CW 1251		0 to 1250W
CW 2501		0 to 2500W
Accuracy		±2% of range for linear loads
Resolution		1W
Apparent Power*		
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

**Note: In a parallel system (for programmable units only), the current/power displayed on the master unit is the sum of all units in the system.*

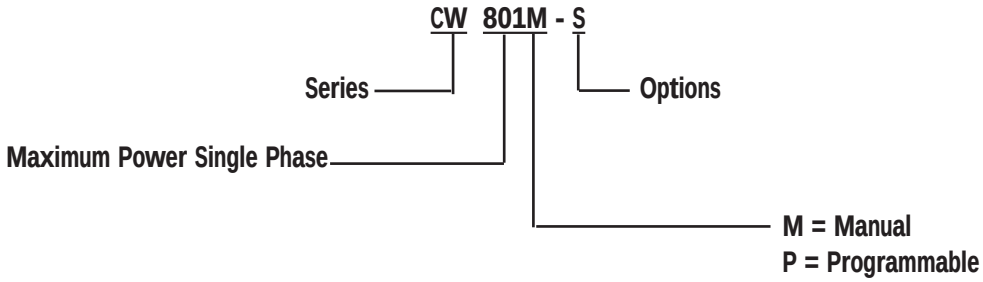
CW Specifications	Manual (M)	Programmable (P)
Power Factor*		
Range		0 to 1
Accuracy		±4% of range for linear loads
Resolution		0.01
Crest Factor*		
Range		0 to 3.5
Accuracy		±5% of range
Resolution		0.01
FRONT PANEL		
Displays & Indicators		
Menu/Status	Green LED for output on, V mode, I mode, slave Red LED for fault	Green LED 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
INPUT		
Voltage and Frequency		
CW 801	90 to 264 VAC, 47 to 63 Hz, single phase	
CW 1251	103 to 264 VAC, 47 to 63 Hz, single phase	
CW 2501	180 to 264 VAC, 47 to 63 Hz, single phase	
Current		
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	
GENERAL		
Regulatory Compliance	CE Mark	
Dimensions		
CW 801 and CW 1251	2U 3.5" H (89 mm) x 19" W (483 mm) x 20.6 D (524 mm)	
CW 2501	3U 5.25" H (133 mm) x 19" W (483 mm) x 20.6" D (524 mm)	
Weight		
CW 801	48 lbs (22 kg)	
CW 1251	53 lbs (24 kg)	
CW 2501	86 lbs (39 kg)	
Shipping Weight		
CW 801	56 lbs (25 kg)	
CW 1251	61 lbs (28 kg)	
CW 2501	94 lbs (43 kg)	
Environmental		
Cooling	Dual speed fan with side air intake, exhaust to rear	
Operating Temperature	0 to 40°C	
Storage Temperature	-40 to 70°C	
Humidity	0 to 85% at 25°C derate to 50% at 40°C (non condensing)	
Altitude	Operating full power available up to 6,000 feet, non operating to 40,000 feet	

** Note: In a parallel system (for programmable units only), the current/power displayed on the master unit is the sum of all units in the system.*

CWP Programming Menu Commands Description

- **Self Test:** Indicates Pass/Fail after Power-on Self Test
- **GPIB Port:** Set 1 to 31 GPIB Addresses
- **Current Limit Type:** Specify Current Shutdown or Foldback
- **Shutdown Delay:** Specify 0 to 3000 millisecond shut-down delay
- **Program Keys Locked Mode:** Specify whether to lockout front panel controls
- **Recall Settings:** Recall 0 to 99 stored system parameters (see Store Settings)
- **Relay State After Power Up Initialization:** Specify whether to automatically close output power relay after power up
- **RMS Voltage Loop:** Specify whether the RMS voltage loop is on or off
- **Analog Input State:** Specify whether an analog input signal will program the output amplitude through the internal DSP-based waveform
- **Store Settings:** Store 0 to 98 system parameters:
  - Volts
  - Frequency
  - Current Limit Type (shut/fold)
  - Current Limit Shutdown Time
  - Programming Keys Mode (enabled/disabled)
  - Voltage Range (low/high)
  - Overvoltage
  - Analog Input (on/off)
  - Clock Signal Direction (input/output)
- **Clock Direction:** Specify whether the clock port outputs a clock pulse or is set to receive input synchronization pulses

CW Model Number Description



Ordering Information

Model Number	Output (Single Phase)			Input (Single Phase)
	Maximum Power	Maximum Current		Voltage (47-63 Hz)
		135V	270V	
CW – Manual				
CW 801M	800 VA	6.0A	3.0A	90 to 264 VAC
CW 1251M	1250 VA	9.4A	4.7A	103 to 264 VAC
CW 2501M	2500 VA	18.6A	9.3A	180 to 264 VAC
CW – Programmable				
CW 801P	800 VA	6.0A	3.0A	90 to 264 VAC
CW 1251P	1250 VA	9.4A	4.7A	103 to 264 VAC
CW 2501P	2500 VA	18.6A	9.3A	180 to 264 VAC

Product specifications are subject to change without notice.

Options & Accessories

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

Rack Slide Kit
Elgar Part No. K161570-01

Multi-Unit Cable
Elgar Part No. 890-497-40
Required for parallel and paralleled polyphase CW-M and CW-P systems

Digital Expansion Cable
Elgar Part No. 890-499-00
Required to configure any parallel or polyphase CW-P system

ELGAR Sorensen POWERTEN

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