

# Elgar ContinuousWave Series

800–2500 VA

## Pure Sinewave, Low Power AC Source

135–310 V

- Low THD and AC noise
- Advanced Measurement Available
- Wide range PFC Input
- Field Parallel Configurable
- Multiple Units Configurable for Multi-Phase Operation



2.6–18.6 A

~ 115 208 230

↔ GPIB RS232

The Elgar 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 series have three power levels, 800 VA, 1250 VA and 2500 VA. The 800 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.

### 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 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 a factory supplied cable. Current shutdown or foldback modes can be selected from a rear panel switch.

The front panels have two bright four digit, seven segment displays. 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. Both series can be paralleled to provide extra power.

### 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 operation. This menu also allows setting current shutdown or foldback modes. Remote IEEE-488.2 and RS-232 control interfaces are standard. LEDs 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.

A separate output-on switch controls power to the load. Remote voltage sense is standard. Transformer coupled output is protected against overvoltage and overcurrent. 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.

### Applications for the CW Series include:

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

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**AMETEK**  
PROGRAMMABLE POWER

# CW Series : Product Specifications

| Input                            |   |                |                |   |                |                |
|----------------------------------|---|----------------|----------------|---|----------------|----------------|
| Model                            | CW 801M   | CW 1251M       | CW 2501M       | CW 801P   | CW 1251 P      | CW 2501 P      |
| Power                            | 800 VA  | 1250 VA        | 2500 VA        | 800 VA  | 1250 VA        | 2500 VA        |
| Voltage                          | 90 - 264 VAC  | 103 - 264 VAC  | 180 - 264 VAC  | 90 - 264 VAC                                    | 103 - 264 VAC  | 180 - 264 VAC  |
| Current                          | 13 ARMS max   | 18.5 ARMS max  | 19.5 ARMS max  | 13 ARMS max                                     | 18.5 ARMS max  | 19.5 ARMS max  |
| Frequency                        | 47 to 63 Hz   |                |                |   |                |                |
| Phases                           | single-phase  |                |                |   |                |                |
| Power Factor                     | >0.99 typical at full load nominal line   |                |                |   |                |                |
| Efficiency                       | >73% typical at full load   |                |                |   |                |                |
| Output                           |   |                |                |   |                |                |
| Model                            | CW 801M   | CW 1251M       | CW 2501M       | CW 801P   | CW 1251 P      | CW 2501 P      |
| Power                            | 800 VA  | 1250 VA        | 2500 VA        | 800 VA  | 1250 VA        | 2500 VA        |
| Voltage                          |   |                |                |   |                |                |
| Voltage ranges                   | 0 to 135 Vrms, 0 to 270 Vrms, user selectable   |                |                |   |                |                |
| Accuracy (>5VAC)                 | ± 1% of range   |                |                | ±0.1% of range <100 Hz, ± 0.2% of range >100 Hz |                |                |
| Resolution                       | 0.1 Vrms  |                |                |   |                |                |
| Total harmonic distortion        | 0.65% typical <100Hz add 0.5%/100 Hz above 100 Hz   |                |                |   |                |                |
| AC noise level (typical)         | <50 mVRMS   | <50 mVRMS      | <100 mVRMS     | <50 mVRMS                                       | <50 mVRMS      | <100 mVRMS     |
| Amplitude stability <sup>1</sup> | ±0.1% of full scale   |                |                | ±0.05% of full scale                            |                |                |
| 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             | 5 Vrms total lead voltage drop  |                |                |   |                |                |
| Current                          |   |                |                |   |                |                |
| 135VAC Range                     | 6.0 ARMS  | 9.4 ARMS       | 18.6 ARMS      | 6.0 ARMS  | 9.4 ARMS       | 18.6 ARMS      |
| 270VAC Range                     | 3.0 ARMS  | 4.7 ARMS       | 9.3 ARMS       | 3.0 ARMS  | 4.7 ARMS       | 9.3 ARMS       |
| Accuracy                         | ± 0.5% typical  |                |                | ± 0.5% max                                      |                |                |
| Resolution                       | 0.1 ARMS  |                |                | 0.01 ARMS                                       |                |                |
| Frequency range                  |   |                |                |   |                |                |
| Range                            | 45 to 500 Hz  |                |                | 45 to 500 Hz, 45 to 1000 Hz (option)            |                |                |
| Accuracy                         | ±0.5% typical   |                |                | ±0.02% max                                      |                |                |
| Resolution                       | 0.1 Hz  |                |                | 0.1 Hz, 0.01 Hz for remote programming          |                |                |
| Phase                            | All models single phase output. Multi-phase system configuration with Digital Expansion Cable                               |                |                |   |                |                |
| Power factor of load             | 0 lag to 0 lead   |                |                |   |                |                |
| Physical                         |   |                |                |   |                |                |
| Model                            | CW 801M   | CW 1251M       | CW 2501M       | CW 801P   | CW 1251 P      | CW 2501 P      |
| Height                           | 3.5 in.   | 3.5 in.        | 5.25 in.       | 3.5 in.   | 3.5 in.        | 5.25 in.       |
| Width                            | 19 in.  | 19 in.         | 19 in.         | 19 in.  | 19 in.         | 19 in.         |
| Depth                            | 20.07 in.   | 20.07 in.      | 20.07 in.      | 20.07 in.                                       | 20.07 in.      | 20.07 in.      |
| Weight                           | 48 lbs (22 kg)  | 53 lbs (24 kg) | 86 lbs (39 kg) | 48 lbs (22 kg)                                  | 53 lbs (24 kg) | 86 lbs (39 kg) |
| Shipping Weight                  | 56 lbs (25 kg)  | 61 lbs (28 kg) | 94 lbs (43 kg) | 56 lbs (25 kg)                                  | 61 lbs (28 kg) | 94 lbs (43 kg) |
| Environmental                    |   |                |                |   |                |                |
| Operating Temperature            | 0 to 40°C   |                |                |   |                |                |
| Storage Temperature              | -40 to +70°C  |                |                |   |                |                |
| Humidity Range                   | 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   |                |                |   |                |                |
| Cooling                          | Dual fan speed with side air intake, exhaust to rear  |                |                |   |                |                |
| General                          |   |                |                |   |                |                |
| Regulatory compliance            | CE Mark   |                |                |   |                |                |

# CW Series : Product Specifications

# 800–2500 VA

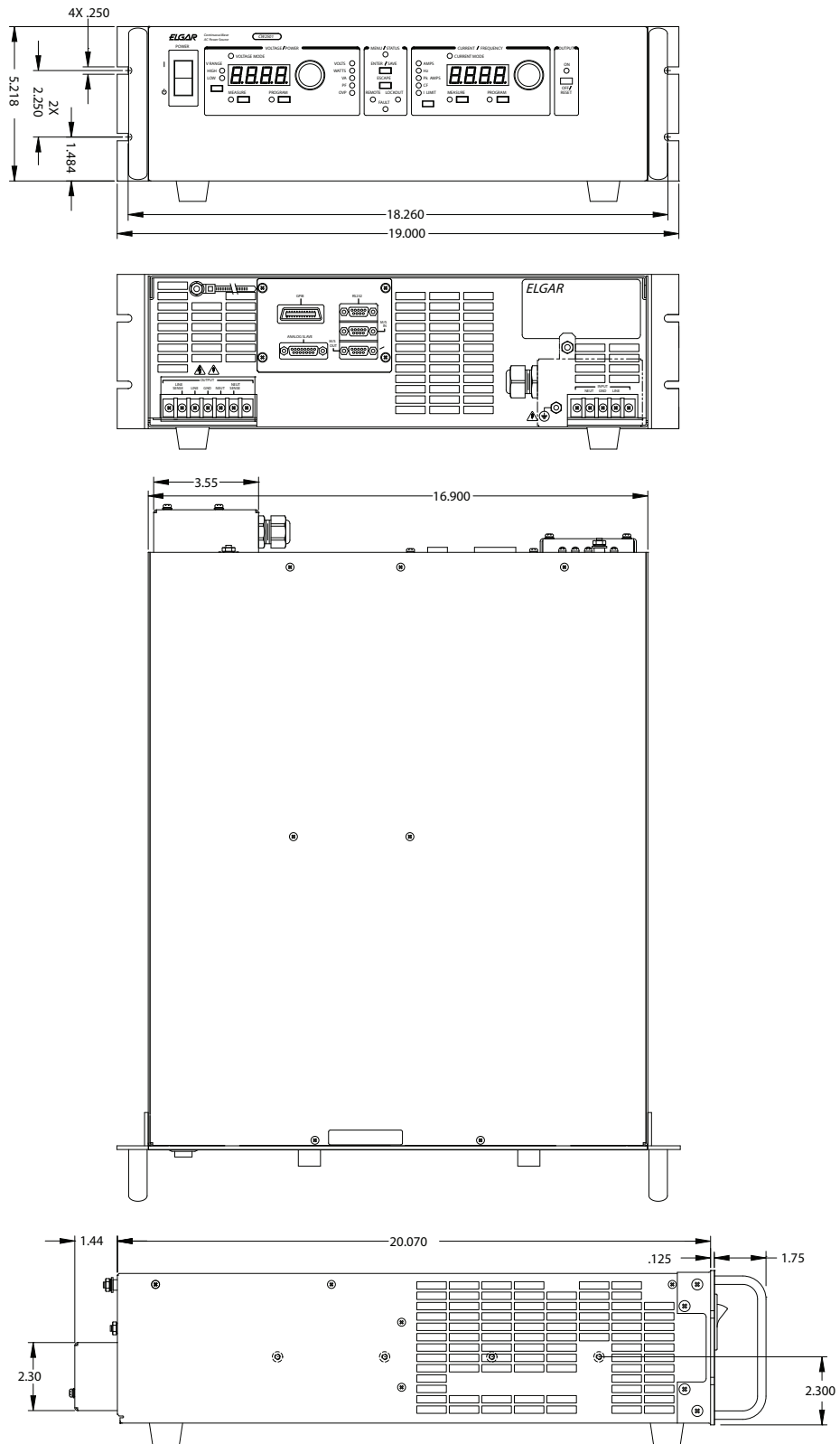
| Measurements                    |  |              |               |   |              |               |
|---------------------------------|--|--------------|---------------|---|--------------|---------------|
| Model                           | CW 801M  | CW 1251M     | CW 2501M      | CW 801P   | CW 1251 P    | CW 2501 P     |
| Power                           | 800 VA   | 1250 VA      | 2500 VA       | 800 VA  | 1250 VA      | 2500 VA       |
| Voltage                         |  |              |               |   |              |               |
| Range                           | 0 to 270 Vrms  |              |               | 0 to 270 Vrms, 0 to 310VRMS (option)  |              |               |
| Accuracy <sup>2</sup> (VAC >5V) | ± 1% of full range   |              |               | ±0.1% of range <100 Hz, ± 0.2% of range >100 Hz, ± 0.3% of range >500 Hz (option) |              |               |
| Resolution                      | 0.1 Vrms   |              |               | 0.1 Vrms  |              |               |
| Current <sup>3</sup>            |  |              |               |   |              |               |
| Range                           | 0 - 6.0 ARMS   | 0 - 9.4 ARMS | 0 - 18.6 ARMS | 0 - 6.0 ARMS  | 0 - 9.4 ARMS | 0 - 18.6 ARMS |
| Accuracy                        | ±2% of range for linear loads with current >0.2A, > 0.4A for 2500 VA |              |               | ±0.5% of range for linear loads   |              |               |
| Resolution                      | 0.1 ARMS   |              |               | 0.01 ARMS   |              |               |
| Peak Current <sup>3</sup>       |  |              |               |   |              |               |
| Range                           | -  | -            | -             | 0 to 25 A   | 0 to 35 A    | 0 to 70 A     |
| Accuracy                        | -  | -            | -             | ±1% of range  |              |               |
| Resolution                      | -  | -            | -             | 0.1 A   |              |               |
| Frequency                       |  |              |               |   |              |               |
| Range                           | 45 to 500 Hz   |              |               | 45 to 500 Hz, 45 to 1000 Hz (option)  |              |               |
| Accuracy                        | ±0.5% typical  |              |               | ±0.02% max  |              |               |
| Resolution of display           | 0.1 Hz   |              |               | 0.1 Hz  |              |               |
| Measurements                    |  |              |               |   |              |               |
| Model                           | CW 801 P   |              | CW 1251 P     |   | CW 2501 P    |               |
| Power                           | 800 VA   |              | 1250 VA       |   | 2500 VA      |               |
| Power <sup>3</sup>              |  |              |               |   |              |               |
| Range                           | 0 - 800 W  |              | 0 - 1250 W    |   | 0 - 2500 W   |               |
| Accuracy                        | ±2% of range for linear loads  |              |               |   |              |               |
| Resolution                      | 1 W  |              |               |   |              |               |
| Apparent Power <sup>3</sup>     |  |              |               |   |              |               |
| Range                           | 0 to 800 VA  |              | 0 to 1250 VA  |   | 0 to 2500 VA |               |
| Accuracy                        | ±2% of range for linear loads  |              |               |   |              |               |
| Resolution                      | 1 VA   |              |               |   |              |               |
| Power Factor <sup>3</sup>       |  |              |               |   |              |               |
| 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   |              |               |   |              |               |
| Phase                           |  |              |               |   |              |               |
| Range                           | -359 to +359 degrees. Positive indicates time lag from reference     |              |               |   |              |               |
| Accuracy                        | Within 100 microseconds of equivalent angle                          |              |               |   |              |               |
| Resolution                      | 1 degree   |              |               |   |              |               |

<sup>1</sup> Over 8 hours at constant line, load and temperature after 15-minute warm-up typical

<sup>2</sup> Typical values measured at point of sense

<sup>3</sup> 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

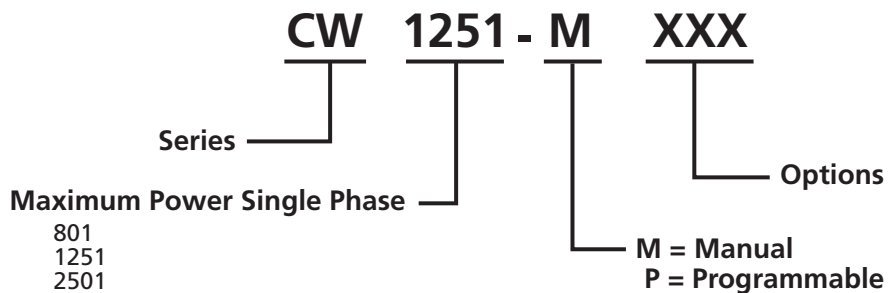
# CW Series : Product Diagram



**CW 2501**

Dimensions are in inches

**Model Number Description**



**Options and Accessories**

|  |
|--|
| H: Expanded frequency range 45 to 1000 Hz (CWP only)   |
| L: Locking knobs (front panel potentiometers) (CW-M only)  |
| S: Sync In/Out (clock/lock) (standard on CW-P)   |
| V: 0-155V/0-310V Output (CW-P only)  |
| -108: 200V/400V Output for (CW 801P Only)  |
| Certificate of Calibration (CW-P only)   |
| Rack Slide Kit: Elgar Part No. K161570-01  |
| Multi-Unit Cable: Elgar Part No. 890-497-40  |
| Digital Expansion Cable: Elgar Part No. 890-499-00 (CW-P only) Required to parallel or configure a 3ø system |

