

Elgar XWave

30 kVA–480 kVA

High Power AC Source / Frequency Converter

132-528 VAC

- Flexible Modular Power Architecture
- High Current Capability
- 150% Inrush Current Loading
- Standard 1000 Hz max frequency operation
- Low Total Harmonic Distortion (THD)
- Custom Voltage Outputs



150-4000 A

The XWave establishes a new standard of performance and value for AC power systems from 30kVA to 480kVA. Using advanced MOSFET based, switch mode power conversion technology, the XWave delivers high power density, efficiency and modular flexibility, all at a budget pleasing price. The XWave is ideally suited for many common AC power source applications including:

- Product design and acceptance testing to world-wide AC mains voltage and frequency standards
- Simulation of high frequency AC bus parameters for marine and aircraft equipment
- High power AC mains power conditioning for sensitive equipment
- Replacement of noisy and inefficient motor-generator (MG) sets

Standard models with single or three phase outputs, in a variety of single or dual output ranges, are offered. Consult with AMETEK Programmable Power sales for custom output requirements.

Features and Benefits

30 to 480 kVA Power Rating

The XWave series is a modular design utilizing 10kW power modules to provide incremental output levels from 30kVA to 480 kVA. Up to 120kVA can be provided in a single cabinet. Multiple cabinet systems are configured for outputs from 120kVA to 480kVA.

Modular Construction

The XWave modular architecture, utilizing interchangeable components, facilitates low cost and quick repairs should the XWave require service, which may be accomplished on-site.

In addition, should requirements change in the future, depending on the specifics, this architecture facilitates field upgrades, further protecting your XWave investment.

Automated Or Manual Control

All models are available with control of voltage and frequency through the front panel or through analog control.

Precision Performance

The XWave features excellent THD performance while providing the power density and efficiency benefits of advanced switch mode power conversion technology. More power with lower noise in less space.

The XWave provides up to 150% of rated output current for up to 7 seconds to handle loads with heavy in-rush currents.

In addition, the XWave provides a line drop compensation feature to overcome distribution losses.

Soft Start

This feature protects AC input service from disturbances while enhancing reliability.

PFC & Low Input Current Distortion

Zig-Zag multi phase input rectification minimizes input line disturbances and provides a typical power factor of 0.8.

Wide Frequency Range Output

The XWave has a standard frequency operating range of 45 to 1000 Hz. This permits simulation of existing and emerging power bus standards in the aircraft and marine markets. A no cost option is available limiting the top frequency to 500 Hz.

Consult with AMETEK Programmable Power sales for custom output frequency requirements.

AMETEK
Programmable Power
9250 Brown Deer Road
San Diego, CA 92121-2267
USA

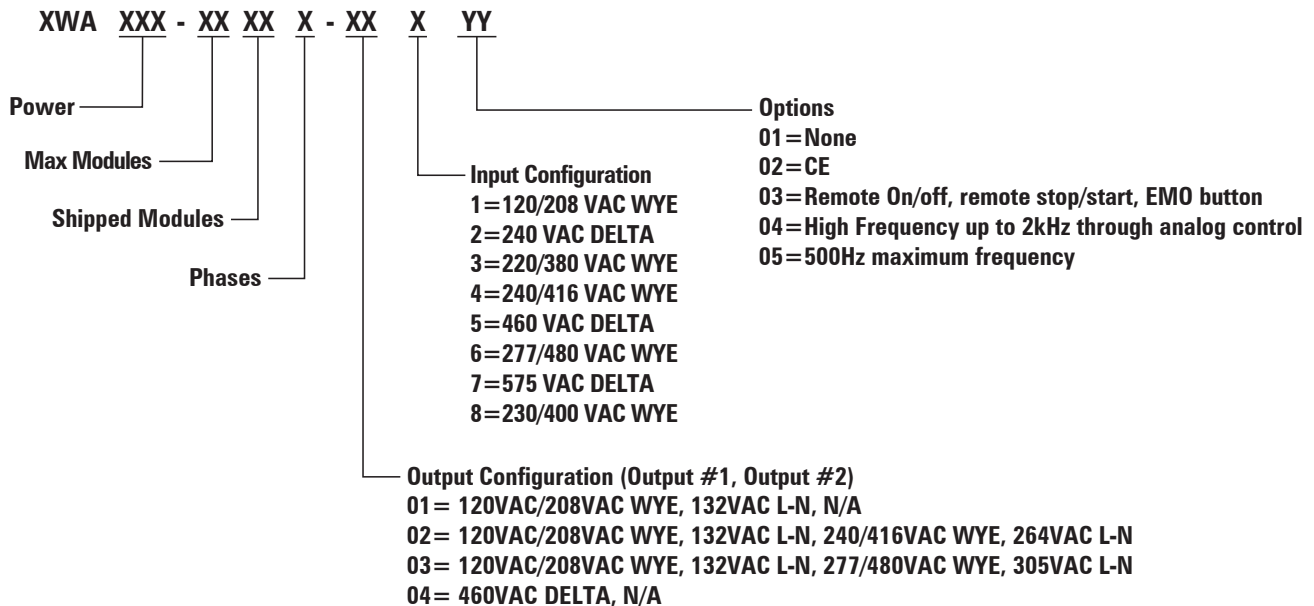
AMETEK[®]
PROGRAMMABLE POWER

Elgar XWAVE : Product Specifications

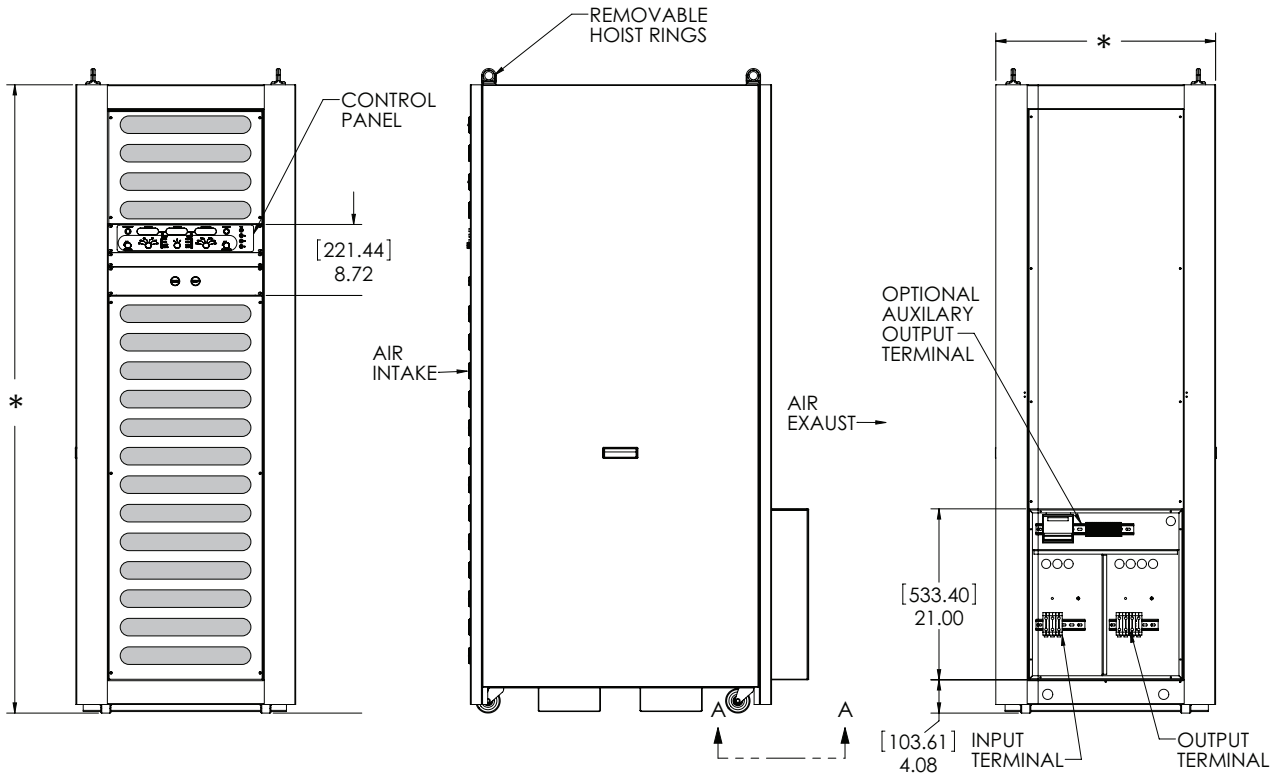
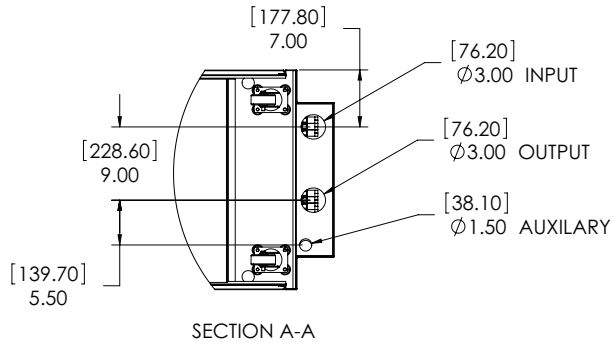
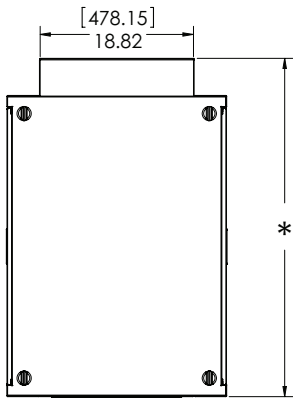
| Output | | | |
|---------------------------------|---|--------------|-------------|
| Configuration | 120/208 VAC, 3 phase, 5 wire WYE. Output is fully isolated from chassis and ground; neutral may be grounded. (Other output configurations available, see chart) | | |
| Voltage Range | Output 1: 0 to 132 VAC L-N / 0 to 228 VAC L-L adjustment is via 10 turn pot and a 10% trim for phases B & C (other output configurations available, see chart). | | |
| Line Regulation | ±0.1% for ±10% input voltage change | | |
| Load Regulation | Frequency | Full Load | |
| For Output 1 | 50/60 Hz | 0.5% | |
| | < 400 Hz | 2.0% | |
| | < 1000 Hz | 8.0% | |
| For Output 2 | 50/60 Hz | 4.0% | |
| | < 400 Hz | 8.0% | |
| | < 1000 Hz | 20.0% | |
| Output Frequency | Switch selectable, fixed frequencies of 50 Hz, 60 Hz, 400 Hz and 800 Hz, (variable 45-1000 Hz). High frequency up to 2 kHz via optional external signal input. | | |
| Frequency Accuracy | ±0.1% | | |
| Output Power | 30-480 kVA, full performance, 0.8 lead or lag. Performance degrades slightly for more extreme power factor but is unconditionally stable into any load P.F. | | |
| Overload Current | Up to 150% of rated output current for 7 seconds, at which time the output will be gated off and require a manual restart | | |
| Repetitive Peak Current | 2.9:1, Peak Current to RMS Current | | |
| Output Voltage Distortion | Frequency | Up to 30 kHz | Up to 1 MHz |
| For Output 1: | 50/60 Hz | 0.5% | 1.5% |
| | < 400 Hz | 1.0% | 2.0% |
| | < 1000 Hz | 1.5% | 2.5% |
| For Output 2: | 50/60 Hz | 0.5% | 1.5% |
| | < 400 Hz | 1.5% | 2.5% |
| | < 1000 Hz | 2.0% | 3.0% |
| Response Time | Corrects for 100% load change in < 150 ms | | |
| Load Imbalance | Maintains performance with 100% load imbalance | | |
| Input | | | |
| Input Voltage | A multi-tapped input transformer allows a system to be quickly connected for any of the popular 3 phase AC Services. | | |
| Voltage tolerance | For all ranges, ± 10%: 208 VAC 3 Phase Wye*, 240 VAC 3 Phase Delta, 460 VAC 3 Phase Delta, 480 VAC 3 Phase Wye** | | |
| Frequency | 47 to 63 Hz (400 Hz inputs available as option) | | |
| Power Factor | Input PF 0.8 typical at 50% to 100% of full rated output | | |
| Input Current Distortion | Less than 5% THD | | |
| Input Service Requirements | 125% of system rating | | |
| Efficiency | 85% at full load. Idle losses less than 1.5 kW on a 30 kVA system | | |
| Monitors And Controls | | | |
| Output Voltmeter (true RMS) | 3 1/2 digit meter with 6 position selector switch. Selects each phase to phase and phase to neutral. Accuracy = 2% of full scale | | |
| Output Current Meter (true RMS) | 3 1/2 digit meter with 3 position phase select switch. Accuracy = 3% of full scale | | |
| Output Frequency Meter | Digital meter with decimal point. Accuracy = ±0.1% of full scale | | |
| Amplitude Control | Master control varies all phases; a balance adjust is provided for B & C phases, each having a 10% range. | | |
| Oscillator Mode Select | Rotary switch, selects 50 Hz, 60 Hz, 400Hz, 800 Hz, variable frequency and program output. | | |
| Variable Frequency Control | High resolution 10 turn pot, varies frequency from 45 to 1,000 Hz | | |
| Environmental | | | |
| Temperature Range | 0 to 45 degrees centigrade | | |
| Humidity | 0 to 95% non-condensing | | |
| Audible Noise | at 3 meters at full load, < 60 dBA at half load, < 50 dBA | | |

*Not available on 120 kVA and above **380, 400 & 416 Wye (standard)

| XWave Standard Models | | | | | | | | |
|-----------------------|-------------|--------|-----------------------|----------------------------|-----------------------|----------------------------|--|-------------------|
| Model | Power (kVA) | Phases | Output 1 AC Voltage | Max Current Arms per phase | Output 2 AC Voltage | Max Current Arms per phase | Size (WxHxD) | Weight (lbs) (kg) |
| XWA030-03031-01x01 | 30 | 1 | 0-132 VAC | 250 | NA | NA | 22" x 50" x 41.6" 56 x 127 X 106 cm | 600 273 |
| XWA030-03031-02x01 | 30 | 1 | 0-132 VAC | 250 | 0-264 VAC | 125 | | 855 389 |
| XWA030-03031-03x01 | 30 | 1 | 0-132 VAC | 250 | 0-305 VAC | 108 | | 855 389 |
| XWA030-03033-01x01 | 30 | 3 | 120/208 WYE 0-132 L-N | 83 | NA | NA | | 600 273 |
| XWA030-03033-02x01 | 30 | 3 | 120/208 WYE 0-132 L-N | 83 | 240/416 WYE 0-264 L-N | 41.7 | | 855 389 |
| XWA030-03033-03x01 | 30 | 3 | 120/208 WYE 0-132 L-N | 83 | 277/480 WYE 0-305 L-N | 36 | | 855 389 |
| XWA060-06063-01x01 | 60 | 3 | 120/208 WYE 0-132 L-N | 166 | NA | NA | 27" x 82" x 43.6" 67 x 208 x 105 cm | 900 409 |
| XWA060-06063-02x01 | 60 | 3 | 120/208 WYE 0-132 L-N | 166 | 240/416 WYE 0-264 L-N | 83 | | 1350 614 |
| XWA060-06063-03x01 | 60 | 3 | 120/208 WYE 0-132 L-N | 166 | 277/480 WYE 0-305 L-N | 72 | | 1350 614 |
| XWA090-12093-01x01 | 90 | 3 | 120/208 WYE 0-132 L-N | 250 | NA | NA | 27" x 82" x 43.6" 68 x 208 x 105 cm | 1300 591 |
| XWA120-12123-01x01 | 120 | 3 | 120/208 WYE 0-132 L-N | 333 | NA | NA | 27" x 82" x 43.6" 68 x 208 x 105 cm | 1600 727 |
| XWA240-24243-01x01 | 240 | 3 | 120/208 WYE 0-132 L-N | 667 | NA | NA | 54" x 82" x 43.6" 137 x 208 x 105 cm | 4000 1818 |
| XWA360-36363-01x01 | 360 | 3 | 120/208 WYE 0-132 L-N | 1000 | NA | NA | 81" x 82" x 43.6" 206 x 208 x 105 cm | 5500 2500 |
| XWA480-48483-01x01 | 480 | 3 | 120/208 WYE 0-132 L-N | 1333 | NA | NA | 108" x 82" x 43.6" 274 x 208 x 105 cm | 7000 3182 |



Elgar XWave : Product Diagram



* SEE TABLE BELOW FOR MODEL SPECIFIC DIMENSIONS

| XWave Standard Models | |
|-----------------------|--|
| Model | Size (WxHxD) |
| XWA030-03031-01x01 | 22" x 50" x 41.6" 56 x 127 X 106 cm |
| XWA030-03031-02x01 | |
| XWA030-03031-03x01 | |
| XWA030-03033-01x01 | |
| XWA030-03033-02x01 | |
| XWA030-03033-03x01 | |

| XWave Standard Models | |
|-----------------------|--|
| Model | Size (WxHxD) |
| XWA060-06063-01x01 | 27" x 82" x 43.6" 67 x 208 x 105 cm |
| XWA060-06063-02x01 | |
| XWA060-06063-03x01 | |
| XWA090-12093-01x01 | 27" x 82" x 43.6" 68 x 208 x 105 cm |
| XWA120-12123-01x01 | 27" x 82" x 43.6" 68 x 208 x 105 cm |
| XWA240-24243-01x01 | 54" x 82" x 43.6" 137 x 208 x 105 cm |
| XWA360-36363-01x01 | 81" x 82" x 43.6" 206 x 208 x 105 cm |
| XWA480-48483-01x01 | 108" x 82" x 43.6" 274 x 208 x 105 cm |