



SINEPOWER manufacture a variety of Static Frequency Converters. Static Frequency Converters convert the source power with a specific input voltage and frequency in to a different output voltage and frequency depending on what the client requires.

The SINE33 three phase Static Frequency Converter guarantees a supply free of disturbances and of high quality with maximum reliability.

SINE SFC units can be used in a variety of applications:

- Civil and Military Aviation
- Aeronautical industry
- Maritime/Nautical Industry
- Manufacturing sector.



### INPUT

- State of the art semiconductor technology (IGBT) Rectifier
- Power Factor Correction (PF=1)
- 95% efficiency
- 4 Quadrant Operation (better response of the system)
- Low input harmonics (<1.5% THDi), to comply with the strictest regulations @ any load.



### OUTPUT

- 4 Quadrant Operation (better response of the system and safer operation for NBPT)
- Vector control Inverter for better response and higher efficiency.



### EFFICIENCY

- Up to 94%
- No load losses: <2% of full Load.



### TECHNOLOGY

- Enclosure Protection class up to IP54
- Over/under voltage at output
- Overload capability designed for:
  - Power stage 120% - Continuous
  - Magnetics 120% - Continuous
- Overload protections set at:
  - 120% for 600seconds
  - 150% for 60 seconds
  - 200% for 2 seconds
- Over temperature protection
- Short circuit proof by electric current limiting and shutdown
- Safety Isolation Transformer.



### OPTIONS

- Communications
  - MODBUS Rs485
  - Remote control box



### NORMS AND STANDARDS

- EMC**
- EN61000-6-4 - Electromagnetic compatibility - Generic emission standard
  - EN61000-6-2 - Generic immunity standard

- SAFETY**
- IEC 60529 - Degrees of protection provided by enclosures (IP Code)
  - IEC 62477-1 - Safety requirements for power electronic converter systems and equipment

- ENVIRONMENTAL**
- Dry heat test (steady state) IEC 60068-2-2 subclause 5.3
  - Damp heat test IEC 60068-2-78 subclause 6
  - Vibration test IEC 60068-2-6 subclause 6
  - Salt mist test IEC 60068-2-52 subclause 6
  - Dust and sand test Test Lc1 of IEC 60068-2-68



### MODELS

- 500kVA and 600kVA
- 800kVA and 900kVA
- 1000kVA and 1200kVA
- 1600kVA
- 2000kVA

# SPECIFICATIONS

## INPUT

- 3 phase 400V/415V AC |  $\pm 10^*$
- 50/60Hz |  $\pm 10\%$
- Input current harmonics |  $< 3\%$  @ Full Load

## OUTPUT

- 3 phase 200VAC / 400VAC / 480VAC |  $\pm 1\%^*$
- 50Hz/60Hz |  $\pm 1\%^*$
- Overall Efficiency | up to 94%
- Max. Crest Factor | 3:1

## RECTIFIER

- 4 Quadrant Operation
- AC Voltage Range | -15% +10%
- Efficiency | up to 97%
- Overload Capacity | 120% Continuous
- Current walk in | 5 seconds to maximum
- Overall current limit | 120%

\* Other voltages and frequencies available on request

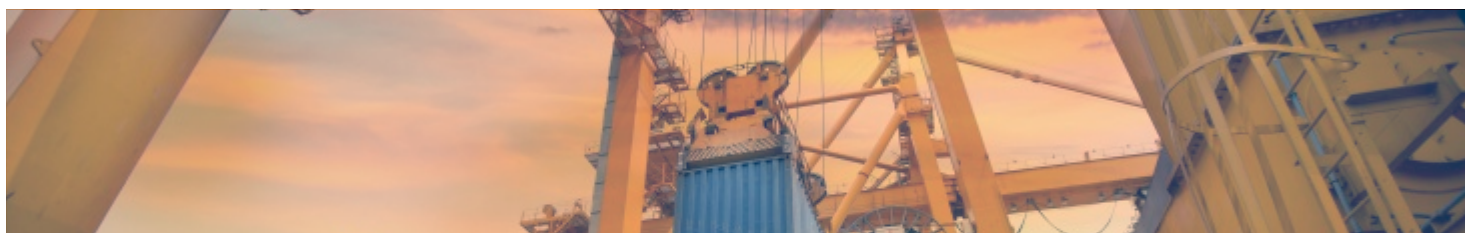
\* Other Electronic Overload limits available on request

## INVERTER

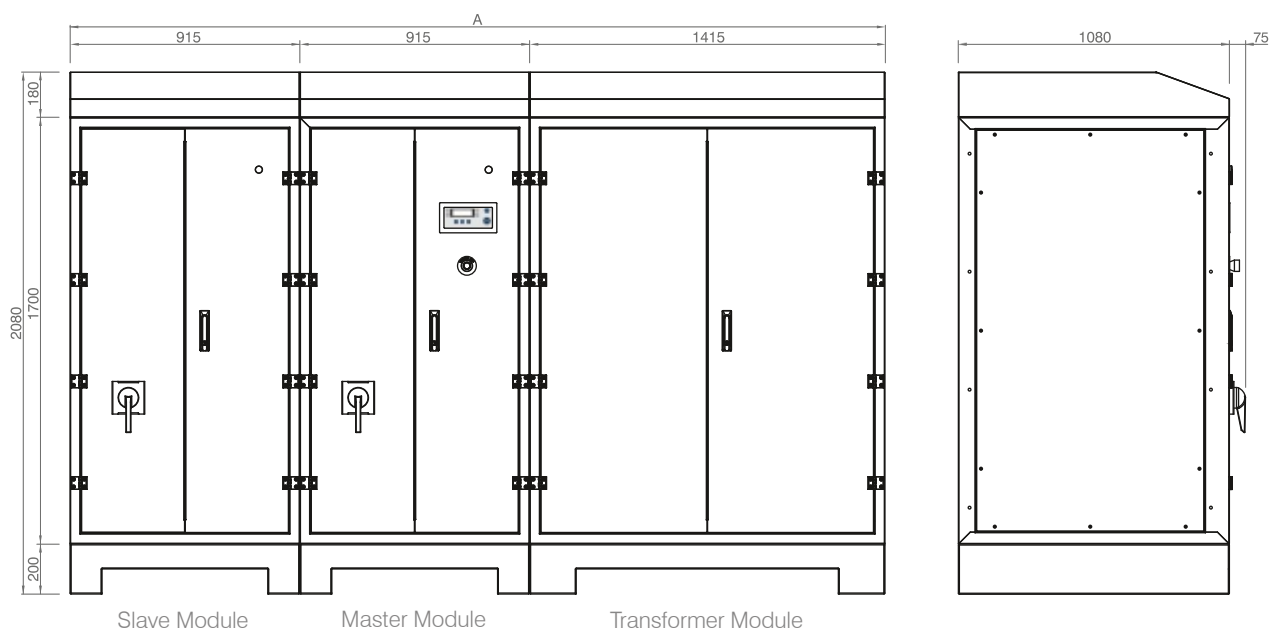
- Static Regulation 0 - 100% load |  $\pm 1\%$
- Dynamic regulation 100% | 5%, recovering to 1% within 40ms
- Total harmonic distortion |  $< 3\%$  (Linear Load)
- Electronic Limit Overload | 120% @ 600s; 150% @ 60s; 200% @ 2s
- Overload Capacity (IGBTs) | 150% Continuous
- Frequency stability |  $\pm 0.01\%$  Crystal Controlled
- Load power factor | 0-1
- Efficiency | up to 97%
- Short circuit proof by electric current limiting and shutdown

## ENVIRONMENTAL CONDITIONS

- Coolant temperature (max) | Forced air up to 40°C
- Ambient temperature (min/max) | -40°C to +40°C
- Relative humidity (min/max) | 0% to 90% without condensation
- Pollution degree | 2
- OVC (Overvoltage Category) | 3
- Altitude | Up to 2000m



# TECHNICAL DRAWING



- 500kVA | 600kVA - A=2745mm (Transformer Module(same size as Slave Module) + MasterModule + Slave Module)
- 800kVA | 900kVA - A=4160mm (Transformer Module + MasterModule + Slave Module(2x))
- 1000kVA | 1200kVA - A=5075mm (Transformer Module + MasterModule + Slave Module(3x))
- 1600kVA - A=5990mm (Transformer Module + MasterModule + Slave Module(4x))
- 2000kVA - A=6905mm (Transformer Module + MasterModule + Slave Module(5x))



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