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THREE PHASE MULTILEVEL INVERTER WITH VARIABLE FREQUENCY OUTPUT

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PRODUCT DESCRIPTION

- Three phase multilevel inverter can be used to convert DC to AC power.
- DC voltage from renewable energy sources or batteries can be converted to AC voltage to power up equipments or appliances.
- Particle Swarm Optimization (PSO) is used to calculate the switching angle in order to eliminated the voltage harmonics.
- The advantage of this product is that it can produce variable frequency output waveform.
- Can be use for variable speed drive with low Total Harmonic Distortion (THD).

ADVANTAGES & NOVELTIES

- Low Total Harmonic Distortion (THD)
- Eliminated lower order harmonic
- Low switching frequency
- Selected voltage level
- Variable frequency
- Can be use for equal and unequal DC sources
- Can be use for different renewable energy sources
- Can be extend for higher voltage

POTENTIAL APPLICATIONS

- Renewable energy application
- Three phase residential
- Three phase industrial
- Educational application
- AC Drives application
- High Voltage application
- Multilevel inverter design

SPECIFICATIONS

- Peak Power: 3000W
- DC input voltage: 90Vdc x 12 set
- AC Output Voltage: 415Vac
- AC output frequency: 10Hz to 120Hz
- AC output waveform: Modified Sine Wave
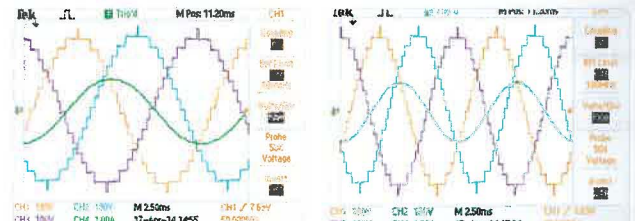

Figure 1: Three phase multilevel inverter

Figure 2: Output waveform for 50Hz and 80Hz with single switching angle
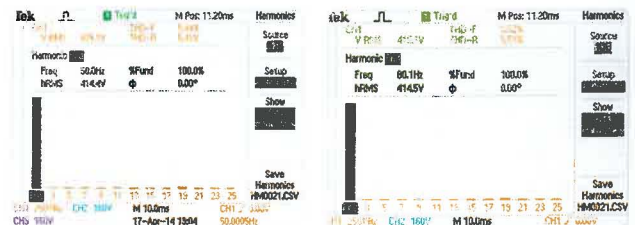

Figure 3: Voltage harmonic profile for 50Hz and 80Hz with single switching angle
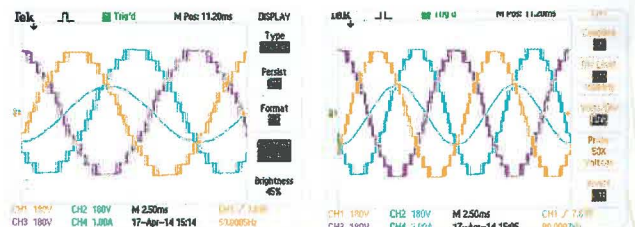

Figure 4: Output waveform for 50Hz and 80Hz with multiple switching angles

Figure 5: Current harmonic profile for 50Hz and 80Hz with multiple switching angles

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