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REKAAN 12 VDC KEPADA 240 VAC PENYONGSANG UNTUK MENJALANKAN LAMPU NEON

ABSTRAK

Laporan ini, bertajuk “Rekaan 12 VDC kepada 240 VAC penyongsang untuk menjalankan lampu neon” meringkaskan sebahagian daripada tugas akhir untuk kursus program Pengajian Sistem Elektrik di Universiti Malaysia Perlis. Penyongsang digunakan untuk penukaran voltan arus terus ke arus ulang alik. Penyongsang biasanya digunakan untuk bekalan kuasa arus ulang alik dari sumber arus terus seperti panel suria atau bateri. Penyongsang adalah nadi dalam sistem suria. Ini adalah pilihan yang baik bagi pengguna yang ingin mengurangkan bil elektrik mereka. Arus ulang alik ditukar daripada 12 VDC dari bateri atau power supply dan frekuensi 50 Hz dengan penggunaan transformer “center tap” . Penyongsang yang digunakan akan menghasilkan gelombang keluaran persegi. Melalui rekaan penyongsang ini, lampu neon dapat beroperasi dengan baik. Panel solar akan digunakan untuk mengecas bateri agar litar penukar ini beroperasi secara berterusan.

DESIGN OF 12 VDC TO 240 VAC INVERTER FOR RUNNING FLUORESCENT LAMP

ABSTRACT

This report entitled "Design of 12 VDC to 240 VAC Inverter for running fluorescent lamp" summarizes apart of final year project for the Electrical System Engineering courses done in University Malaysia Perlis. Inverters are used for Direct Current (DC) voltage to Alternating Current (AC) voltage conversion. Inverters are commonly used to supply AC power from DC sources such as solar panels or batteries. The inverter is the heart of a solar system. This is a good choice for people who want to reduce their electricity bills. The converted AC is from 12 VDC of batteries or power supply and 50 Hz frequency with the use of center tap transformers. The inverter in used will produce a square wave output waveform. The fluorescent lamp able to operate very well uses this inverter design. For a continuously operation of the inverter circuit, a solar panel will be used to recharge the battery.

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LIST OF ABBREVIATIONS

AC	Alternating Current
DC	Direct Current
THD	Total Harmonic Distortion
RMS	Roots Means Square
I	Current
V	Voltage
W	Watt
PWM	Pulse Width Modulation
UPS	Uninterruptible Power Supply
HVDC	High Voltage Direct Current
PV	Photovoltaic
EMF	Electromotive force
Vs	Secondary voltage
Vp	Primary voltage
Ns	Secondary winding
Np	Primary winding
Is	Secondary current

Ip	Primary current
Zp	Primary impedance
Zs	Secondary impedance
Hz	Hertz
R	Resistance
C	Capacitance
NI	National Instrument