BORANG INVENTORI PROJEK PELAJAR

<table>
<tr><th>PERKARA</th><th>MAKLUMAT
INFORMATION</th></tr>
<tr><td>Program
Program</td><td>DIPLOMA KEJURUTERAAN ELEKTRIK (DET)</td></tr>
<tr><td>Jabatan
Department</td><td>JKE</td></tr>
<tr><td>Semester/ Tahun
Semester/ Year</td><td>5</td></tr>
<tr><td>Tajuk Projek
Project Title</td><td>THREE PHASE MOTOR CONTROLLER BY MOSFET USING ARDUINO</td></tr>
<tr><td>Jenis Projek
Type of Project</td><td>Motor Controller</td></tr>
<tr><td>Kategori Kluster Penyelidikan
Category/ research Cluster</td><td>Tanda “ / ” pada yang berkenaan:
Please tick “ / ” where applicable:
<table>
<tr><td></td><td>Sains tulen (Pure Science)</td></tr>
<tr><td></td><td>Sains gunaan (Applied Science)</td></tr>
<tr><td>/</td><td>Teknologi dan kejuruteraan (Technology and Engineering)</td></tr>
<tr><td></td><td>Sains kesihatan dan klinikal (Clinical and Health Sciences)</td></tr>
<tr><td></td><td>Sains sosial (Social Sciences)</td></tr>
<tr><td></td><td>Sastera dan sastera ikhtisas (Arts and Applied Arts)</td></tr>
<tr><td></td><td>Warisan alam dan budaya (Natural Sciences and National Heritage)</td></tr>
<tr><td></td><td>Teknologi maklumat dan komunikasi (Information and Communication Technology)</td></tr>
</table></td></tr>
<tr><td>Ahli Kumpulan
Group member</td><td>1. Name: SIOW WEN KEONG
No. Identification card: 14DET16F2014
2. Name: MUHAMMAD SYAFIQ BIN MUHAMMAD JUMAT
No. Identification card: 14DET16F2038</td></tr>
<tr><td>Penyelia
Supervisor</td><td>Name: EN MOHD JAMHARI ISMAIL BIN MD TOKIT
No. Identification card: 721110-10-5437</td></tr>
<tr><td>Penyelia Bersama Co-Supervisor</td><td>1. Name:
No. Identification card:</td></tr>
<tr><td>Abstrak
Abstract</td><td>Abstract:

Three Phase Motor Controller By Mosfet Using Arduino is a project to allow users to use three phase motor from single phase electric power supply. It is a concept from single phase with the MOSFET as a main semiconductor application to generate three phase supply. Besides that, this controller has PWM function to regulate the speed of the motor.</td></tr>
<tr><td>Keyword
Keyword
(max 5 word)</td><td>Motor Controller, Three Phase Inverter, Three Phase Motor Controller</td></tr>
</table>

<table>
<tr><td>Objektif Projek
Project Objectives</td><td>Through this project, we intend to create an electric power converter to:
· To construct circuit using MOSFET for switching by N type & P type
· To provide three phase supply from single phase electric power.
· Able to run the motor in low voltage.</td></tr>
<tr><td>Skop Projek
Project scope</td><td>This project is design for users that intend to use three phase motor but does not have any there phase electric power supply installed.</td></tr>
<tr><td>IP No</td><td>nil</td></tr>
<tr><td>Dapatan
Finding
(500 words max)</td><td>Compare the different between 415V without inverter and 30V with inverter to three phase motor
<table>
<tr><th></th><th>415V without inverter</th><th>30V with inverter</th></tr>
<tr><td>Power consumption
(without load at 0.1A)</td><td>$P_{(kW)} = \sqrt{3} \times PF \times I_{(A)} \times V_{L\text{-}L\ (V)} / 1000$
$\sqrt{3} \times 0.99 \times 0.1A \times 415 / 1000 =$ 0.71kWh</td><td>$P_{(kW)} = I_{(A)} \times V_{(V)} / 1000$
(30x0.1A)/1000=0.0003kWh</td></tr>
<tr><td>Speed control</td><td>No, constant speed</td><td>Yes, variable with limited range</td></tr>
<tr><td>Flexibility</td><td>No</td><td>More flexible</td></tr>
<tr><td>Full rating</td><td>Can run at full rating</td><td>Cannot run at full rating</td></tr>
<tr><td>Load</td><td>Bigger</td><td>Smaller</td></tr>
</table>
Table 1
Table 1 shows the different between 415V without inverter and 30V with inverter to three phase motor.
Based on table 1, it shows that if the three phase motor is being supply with 30V DC, the motor can’t be used to perform in full rating. However, it is still useful on light usage and speed control. Besides that, the inverter is safer because it is operate in low voltage.</td></tr>
<tr><td>Cadangan untuk kerja-kerja akan datang
Suggestion for future work
(500words)</td><td>All devices that invented are mostly safe, portable and friendly usage. However, this inverter is not come with any protection that could protect the load and the space consumed is too large due to the power transformer. Therefore as a suggestion on the next improvement, it is advisable to add a short circuit protection to protect the load and also human body and transformerless power supply or power supply module to minimize space and weight.</td></tr>
</table>

Gambar berkaitan projek *Picture related to project* (700kb)	 *Figure 1* shows the corner view of *Three Phase Motor Controller By Mosfet Using Arduino*	 *Figure 2 shows the front view of Three Phase Motor Controller By Mosfet Using Arduino*
Rating/Level	Jabatan *Departments*	