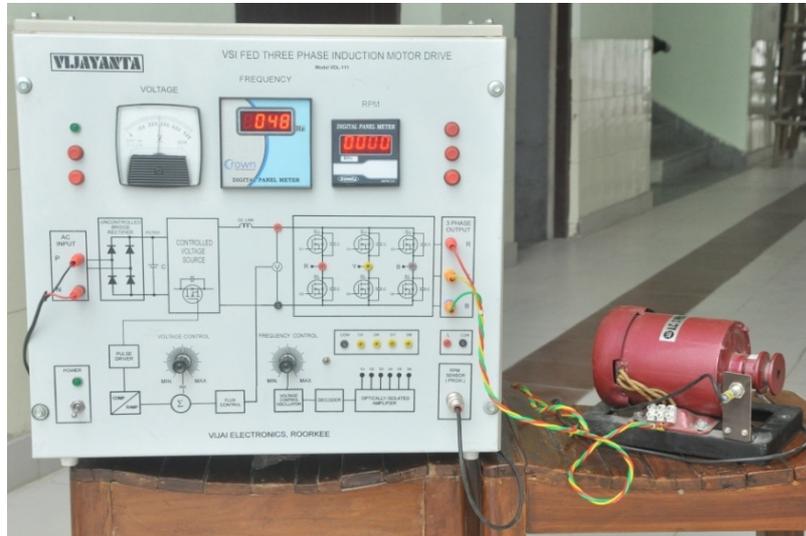


STUDY OF THREE PHASE VOLTAGE SOURCE INVERTER

MODEL : VSI – 100



Three phase voltage-fed PWM inverters are recently showing growing popularity for multi-megawatt industrial drive applications. The main reasons for this popularity are easy sharing of large voltage between the series devices and the improvement of the harmonic quality at the output as compared to a two level inverter. In the lower end of power, GTO devices are being replaced by IGBTs /MOSFET because of their rapid evolution in voltage and current ratings and higher switching frequency. The Space Vector Pulse Width Modulation of a three level inverter provides the additional advantage of superior harmonic quality and larger under-modulation range that extends the modulation factor to 90.7% from the traditional value of 78.5% in Sinusoidal Pulse Width Modulation.

An adjustable speed drive (ASD) is a device used to provide continuous range process speed control (as compared to discrete speed control as in gearboxes or multi-speed motors). An ASD is capable of adjusting both speed and torque from an induction or synchronous motor. An electric ASD is an electrical system used to control motor speed. ASDs may be referred to by a variety of names, such as variable speed drives, adjustable frequency drives or variable frequency inverters. The latter two terms will only be used to refer to certain AC systems, as is often the practice, although some DC drives are also based on the principle of adjustable frequency.

VIJAYANTA TECHNOLOGIES PVT. LTD.

(Formerly Vijai Electronics)

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FEATURES :

- Inverter pulses are terminated with a connector for the study of Students.
- Inbuilt Power supply for Inverter and triggering pulse.
- Separate provision for Load section.
- Power ON indication Switches for Power circuit and Triggering circuit.
- Separate Display unit has been provided.
- Key functions are provided for frequency variation.
- All the important points are terminated with banana connector for monitor/measure/ study the signals using any one of measuring equipments.

TECHNICAL SPECIFICATION :

Panel Meters

- AC voltmeter.
- Voltage range : 500V.
- AC ammeter.
- Current range: 6A.

IGBT Controlled AC Drive

- Input voltage: 230VAC. 50Hz.
- Output voltage: 3 phase 200 to 230V AC.
- Range (Frequency Control) : 0.1 Hz to 100 (400)Hz.
- Control Mode :Sine Wave PWM.
- Capacity : 1/2 HP .

Motor specifications

- 3 phase induction motor, ½ HP , 4 pole, 1500 RPM.

List of Experiments

- Study of Efficiency of AC Motor.
- Study of Speed-Torque Characteristics of AC Motor.

CONTENTS

- MOSFET Based Three Phase Voltage Source Inverter kit.
- 6A power chord.
- 1A Fuse and 6A Fuse.
- User Manual of Kit.

Note: There may be any change in specification due to continuous R & D without notice.

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