Power Electronics Laboratory (EE3P004)

EXPERIMENT-4

To study the working of a three phase sinusoidal PWM inverter

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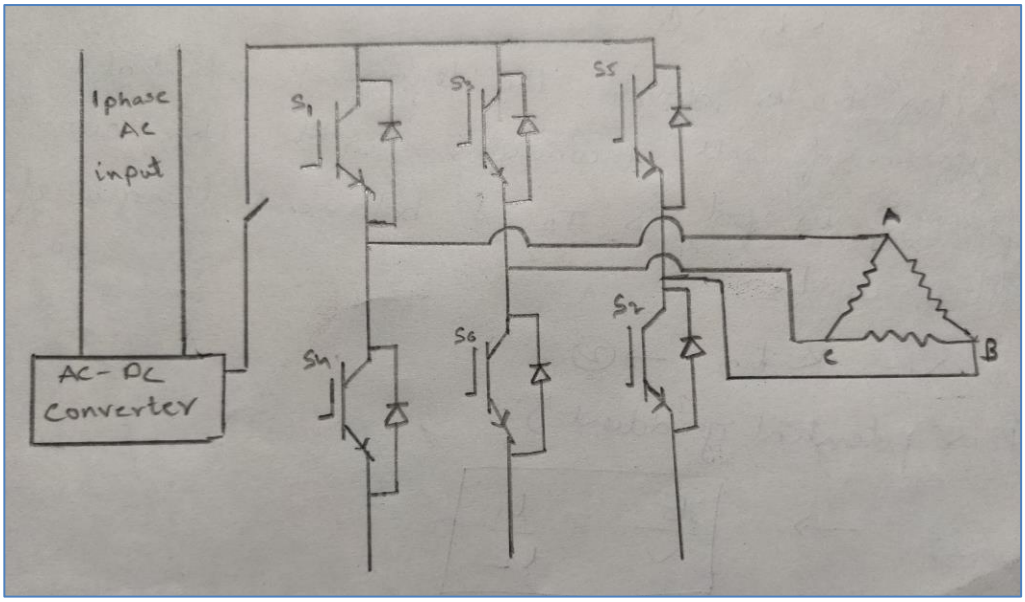
AIM OF THE EXPERIMENT:

To study the working of a three phase sinusoidal PWM inverter

APPARATUS REQUIRED:

Sl. No.	Apparatus Required	Specification	Quantity
01	Module (3- Phase inverter)	220 V, 2A	01No.
02	DigitalStorageOscilloscope (TDS 2014C)	4 Channel, 100 MHz, 2Gs/s	01No.
03	Voltage Probe (TPP0201)	200 MHz, 10 MΩ/<12pF, 10x	01No.
04	Resistance Load	100 Ω, 2.5 A	3 Nos.
05	Connecting Wire		As Reqd.

CIRCUIT DIAGRAM:



OBSERVATION:

S.No	Vab_rms (Volts)	Time(ms)	Frequency (hertz)
1	63.8	49.6	20.16
2	61.2	45.4	22.03
3	60.0	41.6	24.04
4	59.6	37.8	26.46
5	58.0	30.2	33.11

DISCUSSION

1)Why is the output current sinusoidal?

The switching frequency which is the rate at which the device is turned off and on is less and its multiples. So as the frequency increases the impedance offered by the inductance (wL) also increases. Due to high impedance the inductor filters of all the high frequency currents. Even if a high frequency voltage is applied the inductor will allow only very less amount of high frequency current to flow which is the ripple current.