Exp.No.: Date :

RECTIFIERS WITHOUT FILTERS (Full wave & Half Wave)

AIM : To determine the ripple factor and load regulation for Half wave and Full wave rectifiers without filters.

APPARATUS :

S.No.	Name of the Apparatus	Range	Quantity
1.	Transformer	12V-0-12V	1No.
2.	BY127	-	2No.
3.	Ammeter	0-100mA	1No.
4.	Voltmeter	0-20V	1No.
5.	Rheostat	-	1No.

CIRCUIT DIAGRAM:

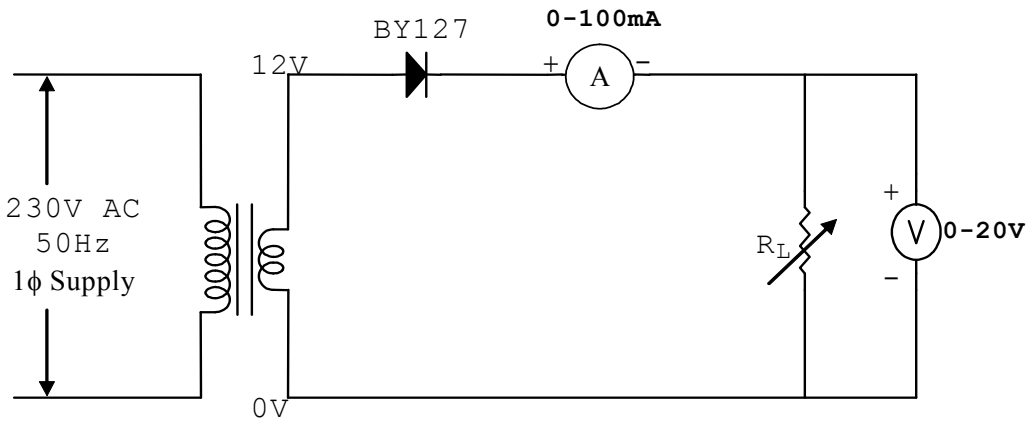


Fig a: Half-wave rectifier

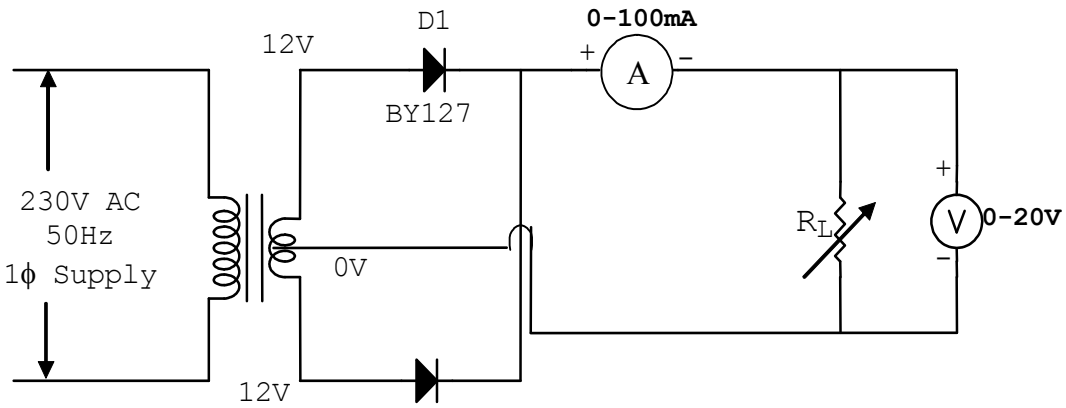


Fig b: Full-wave rectifier

Exp.No.: Date :

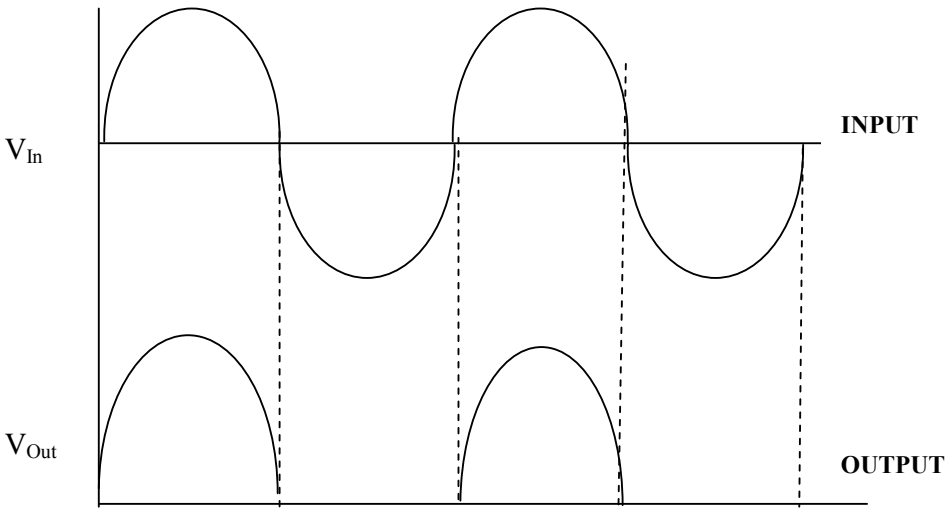
PROCEDURE:

1. Connect the circuit for Half wave rectifier.
2. Vary the load current in steps from 0 to 100mA and note down V_{DC} and V_{AC} across the load.
3. Also observe the input and output waveforms on CRO.
4. Repeat the steps 1 to 3 for full wave rectifier.
5. Plot regulation characteristics by taking I_L on X-axis V_{DC} on Y-axis.
6. Calculate percentage regulation using

$$\% \text{ Regulation} = \frac{V_{NL} - V_{FL}}{V_{FL}} \times 100$$

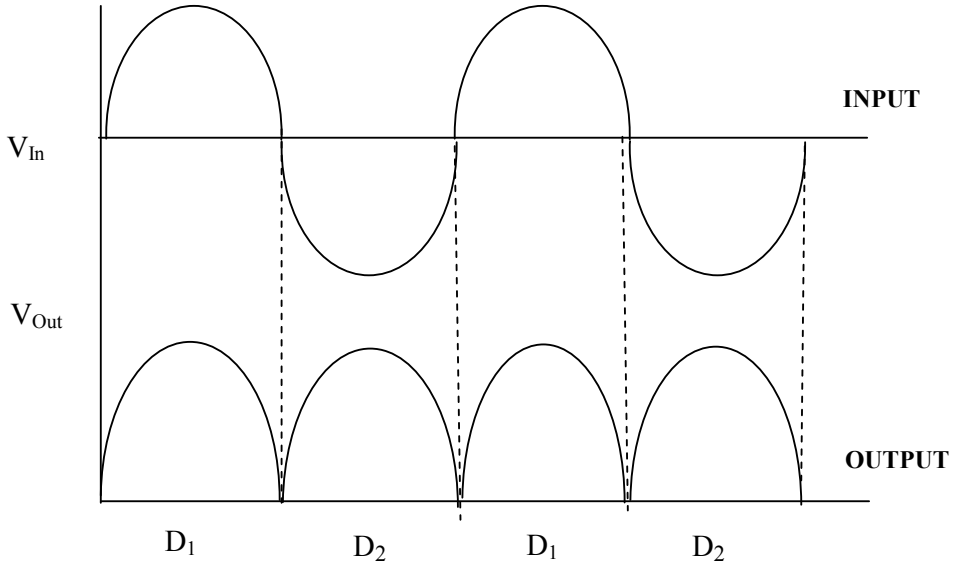
where V_{NL}: output DC voltage when load current is zero
V_{FL}: output DC voltage when load current is maximum

***INPUT AND OUTPUT WAVEFORMS*: HWR**



Exp.No.: Date :

***INPUT AND OUTPUT WAVEFORMS*: FWR**



TABULATION:

a) Half Wave Rectifier

SNo	**I_L** (mA)	**V_{AC}** (V)	**V_{DC}** (V)	Ripple Factor **$r= V_{AC}/V_{DC}$**

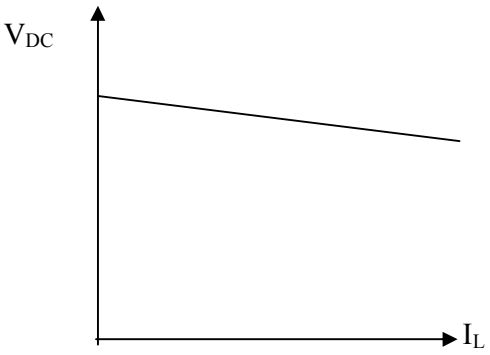
b) Full Wave Rectifier

SNo	**I_L** (mA)	**V_{AC}** (V)	**V_{DC}** (V)	Ripple Factor **$r = V_{AC}/V_{DC}$**

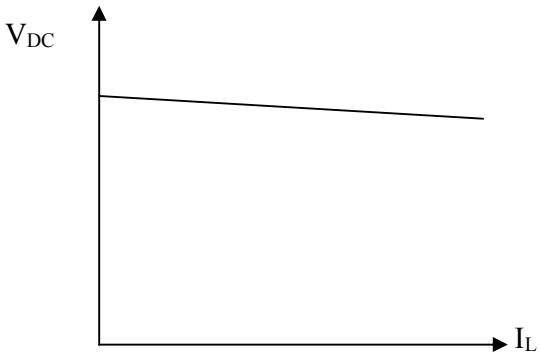
Exp.No.: Date :

$$\% \text{ Regulation} = \frac{V_{NL} - V_{FL}}{V_{FL}} \times 100 =$$

MODEL GRAPHS: Regulation Characteristics



Half Wave Rectifier



Full Wave Rectifier

RESULTS:

1. Ripple factor of Half Wave Rectifier =
2. % Regulation of Half Wave Rectifier =
3. Ripple factor of Full Wave Rectifier =
4. % Regulation of Full Wave Rectifier =