Scilab Manual for Power Electronics Lab by Prof C Harinatha Reddy Electrical Engineering G Pulla Reddy Engineering College ¹

Solutions provided by
Prof C Harinatha Reddy
Electrical Engineering
G Pulla Reddy ENgineering College (Autonomous)

November 26, 2025

¹Funded by a grant from the National Mission on Education through ICT, http://spoken-tutorial.org/NMEICT-Intro. This Scilab Manual and Scilab codes written in it can be downloaded from the "Migrated Labs" section at the website http://scilab.in



Contents

Li	List of Scilab Solutions	
1	Uncontrolled 1-phase Half and Full wave rectifier with R load	5
2	Uncontrolled 3-phase Half wave and Full wave rectifier	6
3	Controlled 1-phase Half and Full wave rectifier with R Load	9
4	Controlled 3-phase Half and Full wave rectifier with R Load	12
5	Step Down and Step up chopper with R load	17
6	1-phase AC- voltage controller with R load	20
7	1-phase Inverter (Half Bridge and H bridge) with R load	22

List of Experiments

List of Figures

2.1	Circuit Diagram of 3phase Half Wave uncontrolled Rectifier with R load	7
2.2	Circuit Diagram of 3phase Half Wave uncontrolled Rectifier with R load	7
2.3	Circuit Diagram of 3phase Full Wave uncontrolled Rectifier with R load	8
2.4	Circuit Diagram of 3phase Full Wave uncontrolled Rectifier with R load	8
3.1	Circuit Diagram of 1phase Half Wave controlled Rectifier with R load	10
3.2	Circuit Diagram of 1phase Full Wave uncontrolled Rectifier with R load	11
4.1	Circuit Diagram of 3phase Half controlled Rectifier with R load	13
4.2	Circuit Diagram of 3phase Half controlled Rectifier with R load	14
4.3	Circuit Diagram of 3phase Full Wave controlled Rectifier with R load	15
4.4	Circuit Diagram of 3phase Full Wave controlled Rectifier with R load	16
5.1	Circuit Diagram of StepDownchopper with R load	18
5.2	Circuit Diagram of Step Up chopper with R load	19
6.1	Circuit Diagram of 1phase AC Vokltage controller with R load	21
7.1	Circuit Diagram of Half bridge Inverter with R load	23
7.2	Circuit Diagram of Half bridge Inverter with R load	24
7.3	Circuit Diagram of Full bridge Inverter with R load	25
7.4	Circuit Diagram of Full bridge Inverter with R load	26

Uncontrolled 1-phase Half and Full wave rectifier with R load

This code can be downloaded from the website wwww.scilab.in This code

Uncontrolled 3-phase Half wave and Full wave rectifier

This code can be downloaded from the website wwww.scilab.in

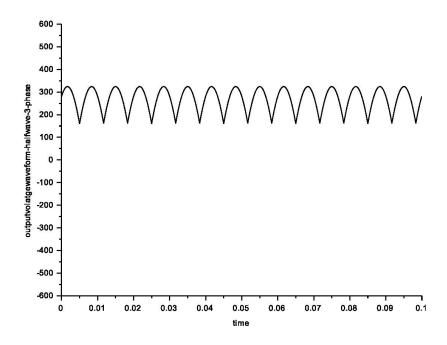


Figure 2.1: Circuit Diagram of 3 phase Half Wave uncontrolled Rectifier with R load $\,$

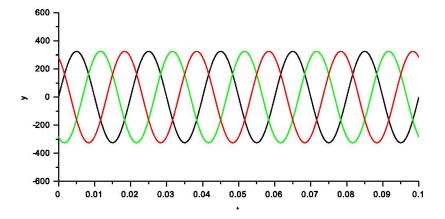


Figure 2.2: Circuit Diagram of 3 phase Half Wave uncontrolled Rectifier with R load $\,$

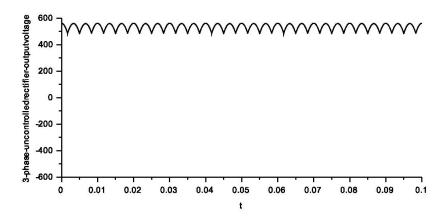


Figure 2.3: Circuit Diagram of 3 phase Full Wave uncontrolled Rectifier with R load $\,$

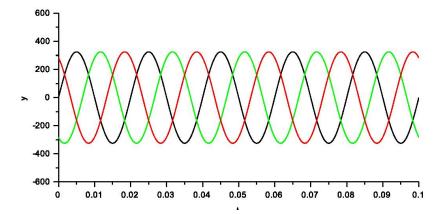


Figure 2.4: Circuit Diagram of 3phase Full Wave uncontrolled Rectifier with R load

Controlled 1-phase Half and Full wave rectifier with R Load

This code can be downloaded from the website wwww.scilab.in This code

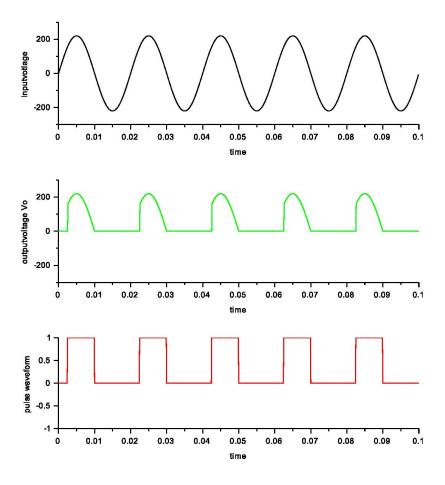


Figure 3.1: Circuit Diagram of 1
phase Half Wave controlled Rectifier with R
 $\log d$

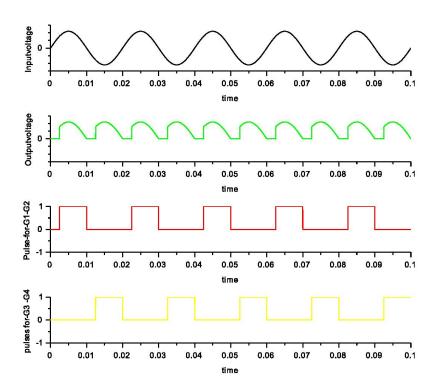


Figure 3.2: Circuit Diagram of 1
phase Full Wave uncontrolled Rectifier with R $\log d$

Controlled 3-phase Half and Full wave rectifier with R Load

This code can be downloaded from the website wwww.scilab.in

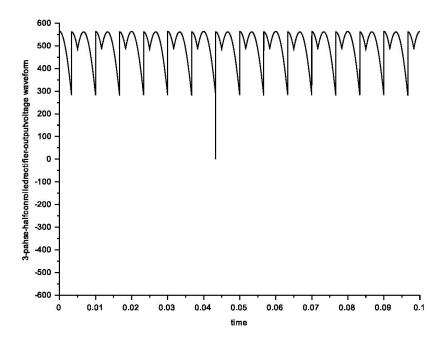


Figure 4.1: Circuit Diagram of 3phase Half controlled Rectifier with R load

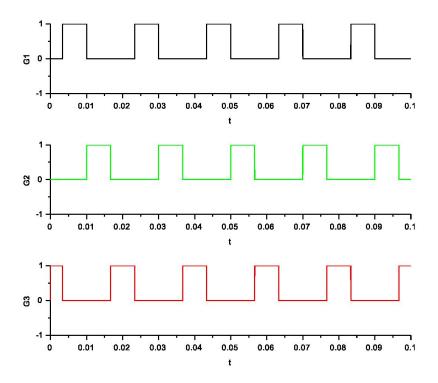


Figure 4.2: Circuit Diagram of 3 phase Half controlled Rectifier with R load

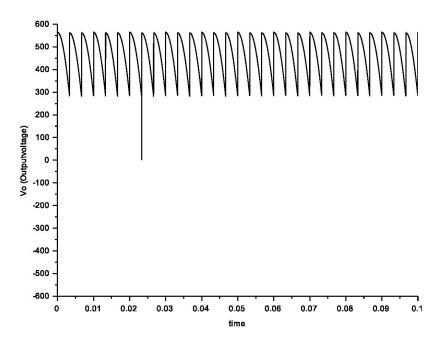


Figure 4.3: Circuit Diagram of 3 phase Full Wave controlled Rectifier with R load

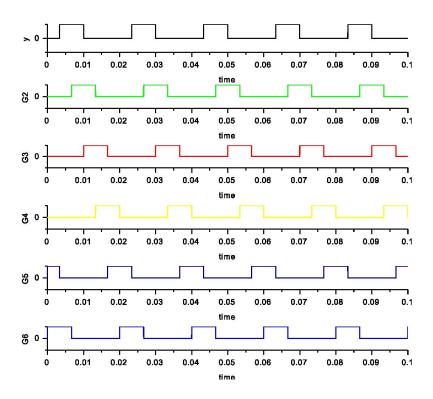


Figure 4.4: Circuit Diagram of 3 phase Full Wave controlled Rectifier with R load

Step Down and Step up chopper with R load

This code can be downloaded from the website wwww.scilab.in

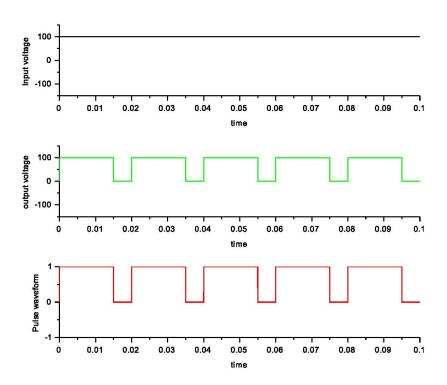


Figure 5.1: Circuit Diagram of Step Downchopper with R load

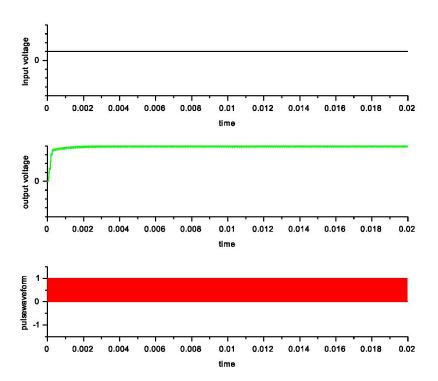


Figure 5.2: Circuit Diagram of Step Up chopper with R load

1-phase AC- voltage controller with R load

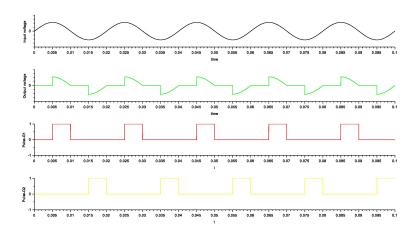


Figure 6.1: Circuit Diagram of 1
phase AC Vokltage controller with R load

1-phase Inverter (Half Bridge and H bridge) with R load

This code can be downloaded from the website wwww.scilab.in This code

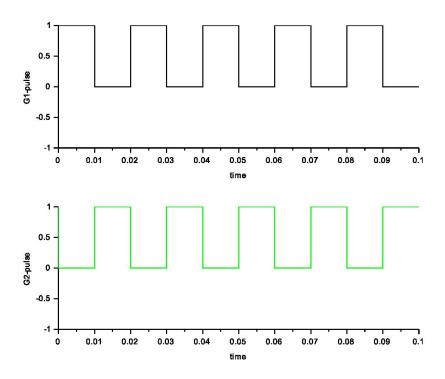


Figure 7.1: Circuit Diagram of Half bridge Inverter with R load

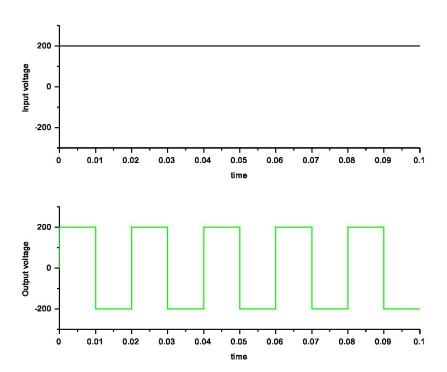


Figure 7.2: Circuit Diagram of Half bridge Inverter with R load

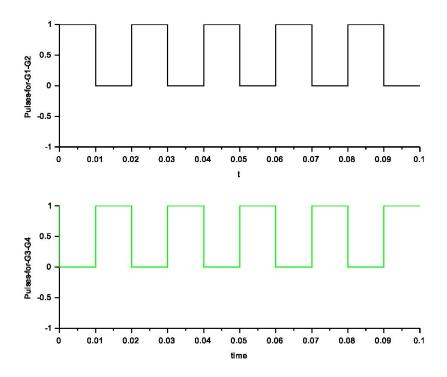


Figure 7.3: Circuit Diagram of Full bridge Inverter with R load

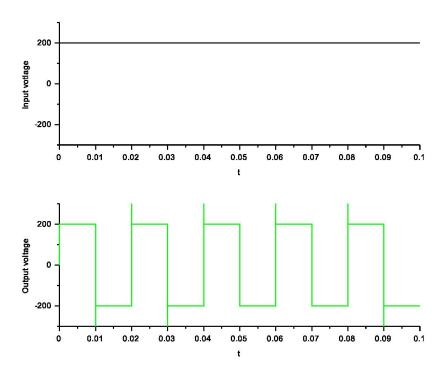


Figure 7.4: Circuit Diagram of Full bridge Inverter with R load