

THREE PHASE FAULT ANALYSIS WITH AUTO RESET ON TEMPORARY FAULT AND PERMANENT TRIP OTHERWISE

ABSTRACT

The project is designed to develop an automatic tripping mechanism for the three phase supply system. The project output resets automatically after a brief interruption in the event temporary fault while it remains in tripped condition in case of permanent fault.

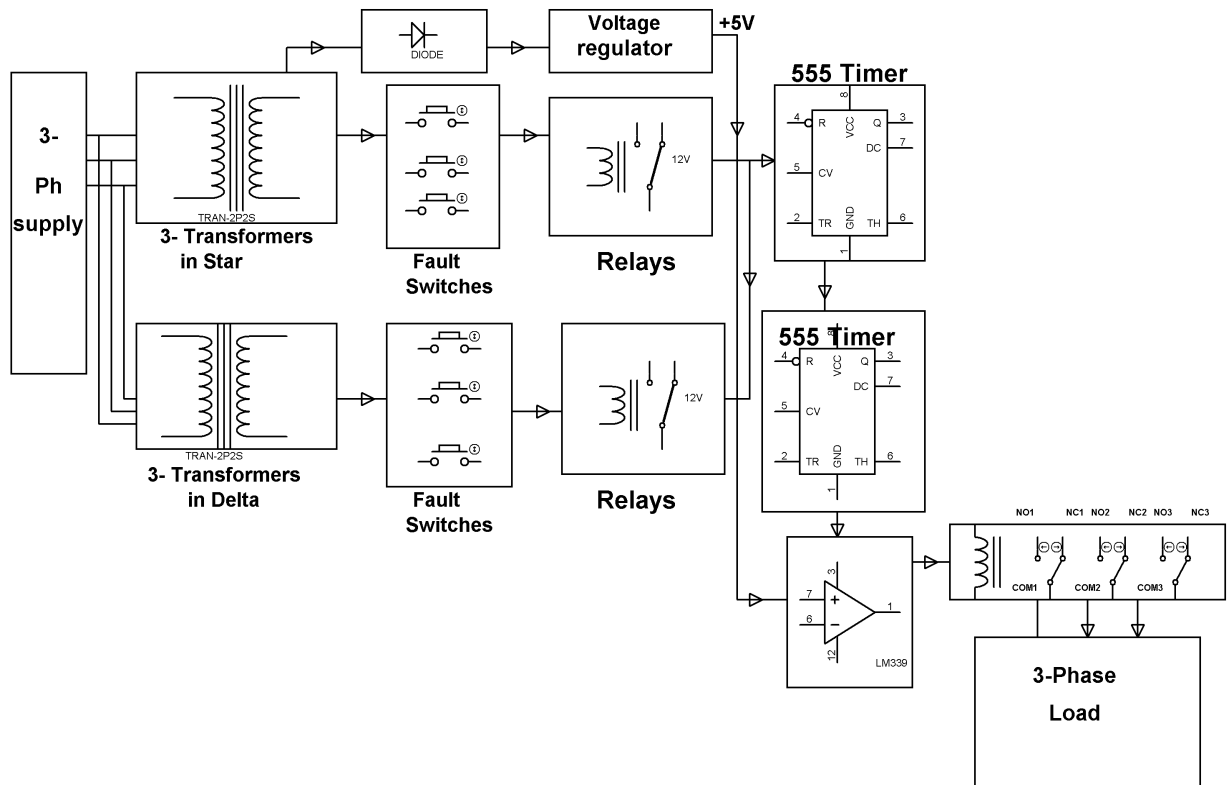
The electrical substation which supply the power to the consumers i.e. industries or domestic can have failures due to some faults which can be temporary or permanent. These faults lead to substantial damage to the power system equipment. In India it is common to observe the failures in supply system due to the faults that occur during the transmission or distribution. The faults might be LG (Line to Ground), LL (Line to Line), 3L (Three lines) in the supply systems and these faults in three phase supply system can affect the power system. To overcome this problem a system is built, which can sense these faults and automatically disconnects the supply to avoid large scale damage to the control gears in the grid sub-stations.

This system is built using three single phase transformers which are wired in star input and star output, and 3 transformers are connected in delta connections, having input 220 volt and output at 12 volt. This concept low voltage testing of fault conditions is followed as it is not advisable to create on mains line. 555 timers are used for handling short duration and long duration fault conditions. A set of switches are used to create the LL, LG

and 3L fault in low voltage side, for activating the tripping mechanism. Short duration fault returns the supply to the load immediately called as temporary trip while long duration shall result in permanent trip.

The concept in the future can be extended to developing a mechanism to send message to the authorities via SMS by interfacing a GSM modem.

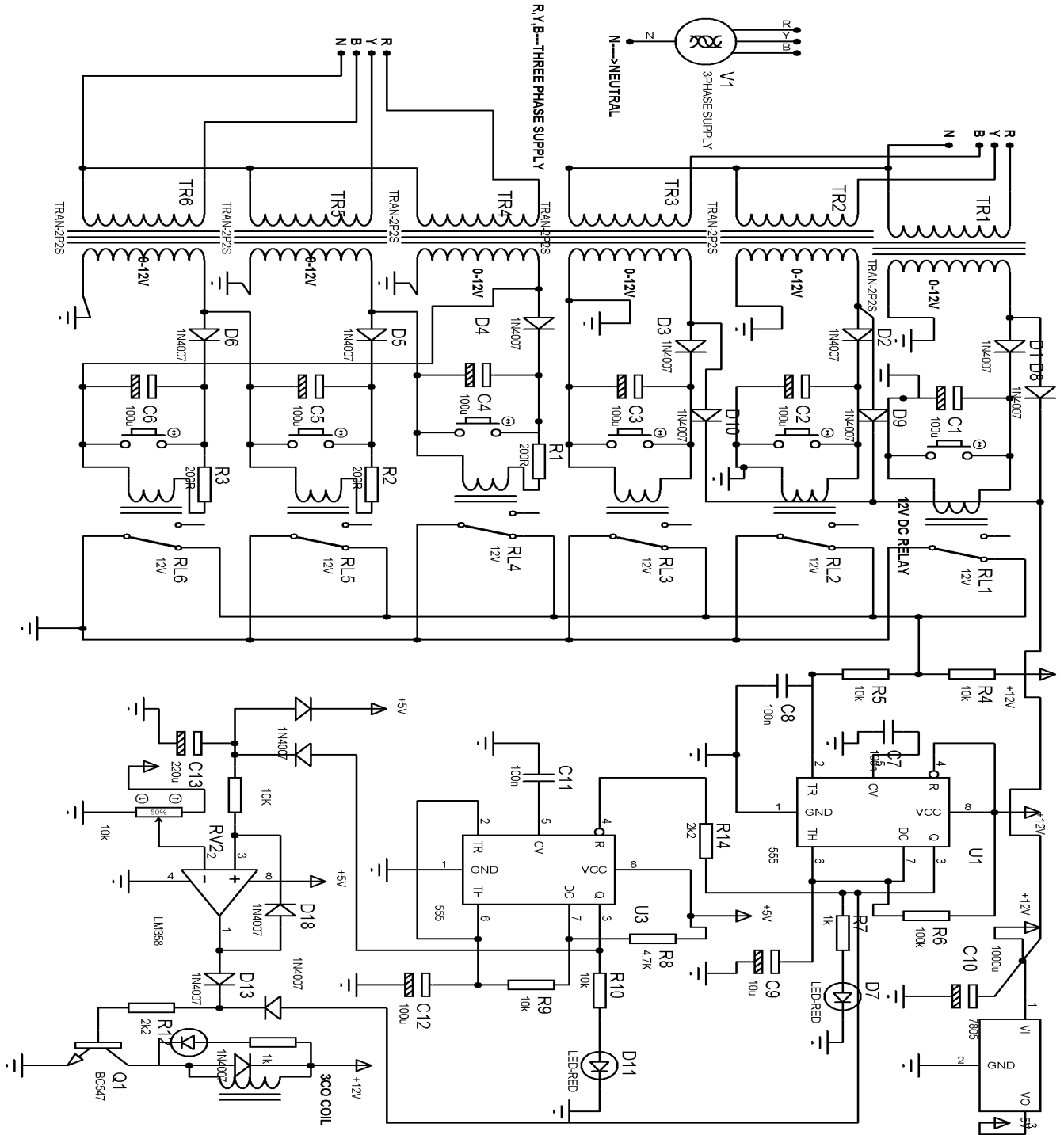
BLOCK DIAGRAM



HARDWARE REQUIREMENTS:

Transformers, Op-amps, Switches, Resistors, Diodes, Capacitors, LEDs, Relays.

Circuit diagram



<u>COMPONENT NAME</u>	<u>QUANTITY</u>
<u>RESISTORS</u>	
220R	3
10K	5
1K	8
4.7K	1
2.2K	2
100K	1
330R	1
10K-PRESET	1
<u>CAPACITORS</u>	
1000uF/35V	1
100uF/25V	7
220uF/25V	1
10uF/63V	2
100nF (0.1uF) (104) Ceramic	3
<u>Integrated Circuits</u>	
555 TIMER	2
LM358	1
7805	1
<u>IC BASE</u>	
8-PINS BASE	3
<u>DIODES</u>	
IN4007	15
<u>TRANSISTORS</u>	
BC547	1
<u>Miscellaneous</u>	
TRANSFORMERS 0-12V, 500mA	6
2 PIN PUSH BUTTONS	6
LAMPS	6
LAMP HOLDERS	6
12V RELAYS	6
3C/O RELAY	1
LED-RED	6
LED-YELLOW	2
LED-GREEN	2
MALE BURGE 2-PIN	6
FEMALE BURGE 2-PIN	6
PCB CONNECTORS 3-PIN	2
AC CONNECTOR 4-PIN	1
R Y B - N WIRE CONNECTING WIRE	

**For complete synopsis, weekly reports, source code, black books
Please mail your complete details on support@makeitortakeit.in
We will mail you within 24hours from the time you mail us.**

Name of the student & phone number
PROJECT NAME

Group member1

Group member 3

Group member 2

Group member 4

Group member 5

College name

Branch

Note to make your kit /project

You need basic knowledge & logic of components /soldering /disordering /breadboard circuiting/PCB designing/etching.

1. You can download the projects from our website makeitortakeit.in and get started to build one, we help you with the basics of know & how.
2. You can purchase the complete do it yourself kit & assemble it.
3. At the last moment, If you are short on time /if your project is not giving output!!!!!! Readymade project kit is available.
4. **Training (optional)** available if you want us to help u in your projects, it includes.
 - 7 sessions, (timing mutually decided).
 - hands on training on breadboard circuiting ,soldering,desoldering,pcb making ,how to use instruments
 - Stepwise guidance you build your project right from the scratch **.
 - complete documentation/references(hard & soft copy)
 - Plotting and Implementing Scale Model.
 - Troubleshooting.
 - Programming of Controllers
 - PCB Software tool, Hardware Cutting, Drilling and Etching