



इ रि से ट  
विद्युत सिगनल प्रयोगशाला  
प्रयोग नं: ई एस एल 27

**IRISET**  
ELECTRICAL SIGNALLING LABORATORY  
**EXPERIMENT NO.: ESL – 27**

नाम

Name : \_\_\_\_\_

अनुक्रमांक

प्राप्त अंक

Roll No : \_\_\_\_\_

Marks Awarded : \_\_\_\_\_

पाठ्यक्रम

Course : \_\_\_\_\_

दिनांक

अनुदेशक का अधाक्षर

Date : \_\_\_\_\_

Instructor Initial : \_\_\_\_\_

## Study of Relay Rack arrangements and Group Units in Siemens Relay Interlocking System

Relay racks are fixed to iron angle scaffolding called frame assembly, scaffolding is made of 65mm X 65mm iron angle with 6 mm thickness frame of height 2087mm and width varying with respect to number of racks.

Frame assembly size for 4 racks is 2087 mm x 2596 mm.

Frame assembly size for 3 racks is 2087 mm x 1962 mm.

Frame assembly size for 2 racks is 2087 mm x 1382 mm.

Scaffolding is erected on 75 mm pedestal with 40 mm insulator i.e. Scaffolding is erected at a height of 115 mm from ground level with one pedestal for each Rack.

Relay Racks are made of 40mm x 40 mm of Iron angle with thickness of 5 mm and its size is 2060 mm x 554 mm.

Relay Rack to Relay Rack gap is 80 mm.

The distance from the parallel wall to the first row of relay racks should be 1.5 m. and the distance between in-between racks should be 1m for easily movement, proper sides and back supports are provided by means of single irons from the adjoining wall with insulators.

### One Relay Rack can accommodate:

- 8 Rows of mini Groups. 8Nos. of Mini groups per Row. i.e Total 64 no. of Mini groups with G Type of fuses.
- 4 Rows of minor Groups. 4Nos. of Minor groups per Row. i.e Total 16 no. of Minor groups with G Type of fuses.
- 4 Rows of Major Groups. 2Nos. of Major groups per Row. i.e Total 8 no. of Major groups with G & D Type of fuses and one Point Chain Group.

### Intermediate Distribution frame

Intermediate Distribution frame consisting of Tag Blocks are used in case of Major yards. IDF is numbered according to the Relay Rack numbering.

60 cores and 40 cores indoor cables are used to make the connection between Relay Group and Tag Blocks.

There are three types of Tag Blocks are available

- 1) 200 way Tag Blocks
- 2) 160 Way Tag Blocks
- 3) 96 Way Tag Blocks

On one IDF Pillar Maximum 10 Tag Blocks can be connected.

One Tag Block of 200 terminals can accommodate one Major Group or 2 Minor Groups or 5 Nos. of Mini Groups. One Tag Block of 160 terminals can accommodate 4Nos. of Mini Groups.

96 Way Tag Blocks are normally connected inside the control Panel for panel wiring and also at the Cable termination Board.

**Study the arrangement of Relay Racks and Group units and answer the following:**

1. How many types of Relay Groups are there? Name them.
2. What is the capacity of each Relay Rack ?
3. What are the important Groups are used in this system?
4. Explain How the wiring is done between Relay Rack and IDF ?

5. Explain how the IDFs' are numbered ?

6. How many types of tag Blocks are used? Give a sketch of 160 way tag Block with numbering details.

Date:

Signature of the Trainee