

Report Submission Guidelines

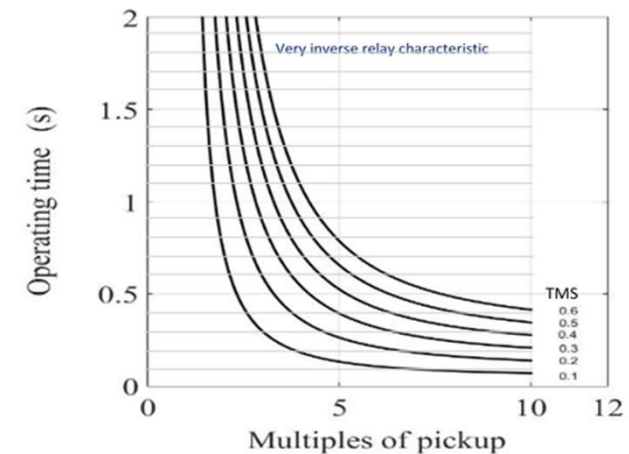
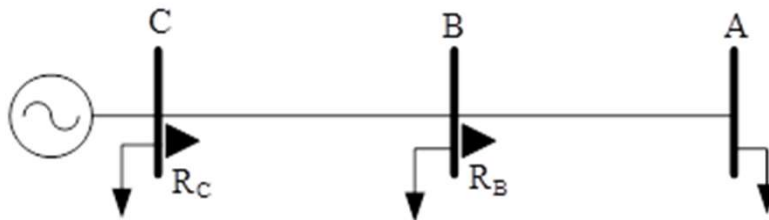
Experiment 01: Verification of Overcurrent Relay Characteristic

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Report Submission : *Handwritten*

1. Plot the overcurrent relay characteristics for the four data sets provided in four graph sheets. (Write your roll number and name at the top of the sheets)
2. Also plot the reference characteristic (calculated by overcurrent relay standard equation as for the particular curve used) with each plotted graph.
3. Write your assessment for each experimental data set compared to reference curve.
4. Write your suggestions, how the performance of the relay can be improved further?
5. Relays R_B and R_C have CTs of 100:5. Maximum fault current at bus B is 800 A. Pickup current of both relays is 8 A. Relays R_B and R_C are set with TMS = 0.1 and 0.3 respectively. If the coordination time interval required is 0.3 s, comment on the TMS settings of the relays for the system.



Report Submission:

6. A 12.47 kV distribution system is shown below. Relays R_B and R_C are set with IEEE Very Inverse (VI) curve and coordinated with a time interval of 0.3 s. CTs for R_B and R_C are of 100:5 and 200:5 respectively. Pickup setting and TMSs of both the relays are provided below in the Table-I. The Simulink model of the system is provided. Create phase-A-to-ground faults at F_1 , F_2 and F_3 , as shown in the figure with a fault resistance of (Last digit of your Roll Number) ohm. Fill Table-II with fault current values measured by the relays and corresponding operating times (see instruction in the table for R_f).

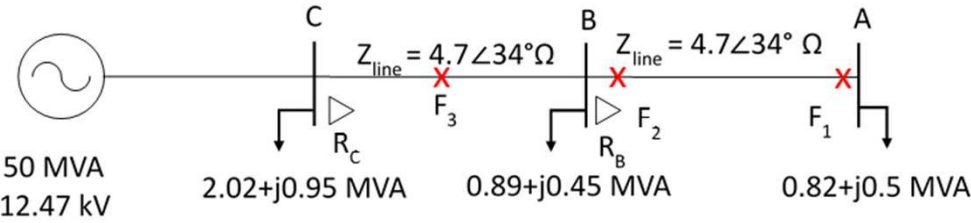


Table-I		
Relays	I_{pickup} (A)	TMS
R_B	79	0.1
R_C	162	0.4

Very Inverse (VI) - IDMT characteristics,

$$t = \left(\frac{19.61}{(I/I_{pickup})^2 - 1} + 0.491 \right) TMS$$

Table-II

Roll Number:						
$R_f =$ (Last digit of Roll Number) ohm, in case of zero, take 0.01 ohm						
Fault Locations	F_1		F_2		F_3	
Relays	R_B	R_C	R_B	R_C	R_B	R_C
I (A)						
t (s) simulation						
t_ref(s) standard curve						

Pages to be submitted

- Page-1 :Roll No, Name at the top, discussion on observations of the 4 cases as mentioned in the earlier slide
- Page-2 –page-5- graph papers with plots (roll No, Name at the top)
- Page 6- the assignment given in point-5 in earlier slide (roll No, Name at the top)
- Page 7- fill up the table with your results
- Create a pdf of all the pages in order and submit