इ रि से ट
विद्युत सिगनल प्रयोगशाला
प्रयोग नं: ई एस एल 34

IRISET
ELECTRICAL SIGNALLING LABORATORY
EXPERIMENT NO. : ESL 34

नाम
Name : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

अनुक्रमांक
Roll No : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

पाठ्यक्रम
Course : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

दिनांक
Date : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

प्राप्त अंक
Marks Awarded :

अनुदेशक का अधाक्षर
Instructor Initial :

HANDS-ON PRACTICE ON MICROLOK-II EI

Interlocking alterations through Application Software

AIM: Hands-on practice of MICROLOK-II EI Application Software alterations and it's testing after the alterations.

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Cases 1 to 6 are given below. Trainees are required to alter the application software as per the case. After alteration compile the same and upload it to the MLK-II system and finally test it for checking the effectiveness of the alterations.

Case:

1. Timer settings: In this S1JR timer has to be given more time 120 seconds instead of 10 seconds of demo time.

2. Temporary sick line: In this common loop has to be made temporary sick line by removing 12RWR & 19RWR circuits.

3. Restriction of pass-through via common loop line: In this pass-through movement via common loop line has to be restricted by providing the S27OVSR Front contact and S1ASR front contact in S27UCR circuit.

4. Suspension of Emergency crossover reverse movement: In this Point No: 11RWR & 20 RWR circuits are to be inactivated. So that those points cannot be operated.

5. Restricting the Home signal aspect to Caution only even in case of run-through condition: Home signal S30 DR circuit has to be inactivated.

6. Reduced overlap for giving the more flexibility: Overlap for Home signal S1 is to be reduced up to 18BT track circuit only. This facilitates flexibility for signals Sh21, Sh8, S4. All the relevant circuits such as S1RR, S1UCR, S1HR, CO1RR, CO1UCR, CO1HR, Sh21RR, Sh8RR, Sh8UCR, Sh8HR, S4RR, S4UCR, S4HR, 23LXRR, 23LXFR are to be altered.

Guidelines for doing above cases:

Open the ' Hands-on practice' Folder from the desktop or if it is not found ask instructor for help.

Open the 'IRISET_TRAINEE_06.ML2' File and save as 'YOURNAME_CASENo_06**.ML2**' file in the same folder and then do the alterations as per requirement.

Consider one case at a time and do the alterations in the above file and save it and then compile it by pressing the 'Ctrl and 1' buttons simultaneously. Then upload the 'YOURNAME_CASENo_06**.MLP**' File to the Microlok-II system with the help of maintenance tool and test it for its effectiveness.

Note for inactivating any statement:

1. For single line statement // (double slash) can be used.

Eg: // DEFINE LOCAL INPUTS AND OUTPUTS

2. For multiple line or single line or part of the line statements at the beginning of the statement % shall be typed and at the end of the last line \ (backward slash) shall be typed.

Eg: % IN THIS PROGRAME VARIOUS LOCKING ALTRATIONS ARE REQUIRED TO BE DONE DUE TO THE REDUCED OVERLAP TO GIVE MORE FLEXIBILITY TO THE YARD BYPROVIDING THE 18BT TRACK CIRCUIT LENGTH IS 120 METERS \

3. For multiple line or single line or part of the line statements at the beginning of the statement /*(forward slash followed by star) shall be typed and at the end of the last line */ (star followed by forward slash) shall be typed.

Eg: **/*** IN THIS PROGRAME VARIOUS LOCKING ALTRATIONS ARE REQUIRED TO BE DONE DUE TO THE REDUCED OVERLAP TO GIVE MORE FLEXIBILITY TO THE YARD BYPROVIDING THE 18BT TRACK CIRCUIT LENGTH IS 120 METERS ***/**

Case 1: Timer settings

If the required timer bit (S1JR) is **NOT** defined as **Adjustable** in the timer section of Application software, then

- Open Application software
- Go to timer bits section
- Change the required timer bit (S1JR) value as 120seconds.
- If this timer is required to change frequently then add a word 'Adjustable' in a new line before the timer bit. As shown below.

Adjustable
S1JR; SET=120:SEC; CLEAR=0:SEC;

- Compile the program by pressing Ctrl+1 from keyboard and see that there are no errors and warnings and note the ' Application image Check sum' value. The Check sum value is required to confirm that only required program is being uploaded.
- Open the maintenance tool program and upload the compiled software.

If the required timer bit (S1JR) is defined as **Adjustable** in the timer section of Application software, then

- Go to maintenance tool software program
- Go to system configuration
- Select the option 'modifying vital and non-vital settings'.
- Give the password as ' microlokii ' and press enter on keyboard.
- Now system will ask to reset the Microlok unit.
- Reset the Microlok from the front panel of CPU card and click on 'OK' on the computer.
- Now system configuration menu will be opened, then click on 'Timers' on the computer.
- Change the value of required timer bit (S1JR) as 120,000milli seconds, and click on 'DONE'.

- Then Microlok starts Resetting automatically.

Case 2: Temporary sick line

- Open Application software
- Go to the logic section.
- Deactivate the Assign statements of 12RWR, 12RWKPR, 19RWR and 19RWKPR as shown below.

```
/* ASSIGN      A_ENABLE * 12RWR.AB * ( 12RWR.BA +
B_SYSFAILJ1 + B_SYSOKJ2 * 12RWR)
                    TO 12RWR; */
```

- Compile the program and see that there are no errors and warnings and then upload it to the Microlok-II system.
- Then test the Microlok-II system for the alterations effectiveness.

Case 3: Restriction of run-through via common loop line

To avoid run through signal moments home signal overlap should lock the starter signal. For this,

- Open Application software
- Go to the logic section.
- In the ASSIGN statement of S27UCR insert S27OVSR front contact and S1ASR front contact in series.
- Compile the program and see that there are no errors and warnings and then upload it to the Microlok-II system.
- Then test the Microlok-II system for the alterations effectiveness.

Case 4: Suspension of emergency crossover movements.

- Open Application software
- Go to the logic section.
- Deactivate the Assign statements of 11RWR, 11RWKPR, 20RWR and 20RWKPR.
- Compile the program and see that there are no errors and warnings and then upload it to the Microlok-II system.
- Then test the Microlok-II system for the alterations effectiveness.

Case 5: Restricting the Home signal aspect to caution aspect.

- Open Application software
- Go to the logic section.
- Deactivate the Assign statement of S30DR.
- Compile the program and see that there are no errors and warnings and then upload it to the Microlok-II system.
- Then test the Microlok-II system for the alterations effectiveness.

Case 6 : Reduced overlap for giving the more flexibility.

- Open Application software
- Go to the logic section.
- Do the following alterations as given below.

1. Alterations to be done in the S1RR circuits:
   a. S1ARR.AB circuit:
      - Go to ASSIGN statement of S1ARR.AB
      - Delete 20NWKPR1.
   b. S1BRR circuit:
      - Go to ASSIGN statement of S1BRR.AB
      - Delete 20NWKPR1.
   c. S1CRR circuit
      - Go to ASSIGN statement of S1CRR.AB
      - Delete 20RWKPR1.

2. S1UCR circuit:
   - Go to ASSIGN statement of S1UCR.AB
   - Delete 20NWKPR.

3. S1HR circuit:
   a. S1HR1 circuit:
      - Go to ASSIGN statement of S1HR.AB
      - Delete 23LXPR, 23LXFR-B, 20RWKPR, S4ASR, Sh8ASR, 11RWKPR, 13RWKR.
   b. S1HR2 circuit:
      - Go to ASSIGN statement of S1HR2.AB

- Delete 3TR, 20BTR, 20NWKPR, 20ATR, 20RWKPR.

c. S1HR circuit:

- Go to ASSIGN statement of S1HR.AB
- Delete 23LXPR, 23LXFR-Back + S3 OVSR, 18NWKPR,S4OVSR,19NWKPR.

4. Co1 Circuit:

a. Co1BRR circuit:

- Go to ASSIGN statement of Co1BRR.AB
- Delete S4RR-back.

b. Co1 HR circuit:

- Go to ASSIGN statement of Co1HR1.AB
- Delete 23LXPR, 23LXFR-back.

5. Sh21 RR Circuit:

a. Sh21 CRR circuit:

- Go to ASSIGN statement of Sh21CRR.AB
- Delete S1BRR-Back, CoBRR-Back.

b. Sh21 DRR circuit:

- Go to ASSIGN statement of Sh21DRR.AB
- Delete S1ARR-Back + 18NWKPR, S1BRR-Back, Co1BRR-Back.

6. Sh8 circuit:

a. Sh8 RR circuit:

- Go to ASSIGN statement of Sh8RR.AB
- Delete Co1BRR-back.

b. Sh8 UCR circuit:

- Go to ASSIGN statement of Sh8UCR.AB
- Delete CO1_ASR+13RWKPR, 18NWKPR+ 11RWKPR.

c. Sh8 HR circuit:

- Go to ASSIGN statement of Sh8HR.AB
- Delete CO1_ASR+ 11RWKPR+ 13RWKPR, 11NWKPR.

7. S4 Circuit:

a. S4RR circuit:

- Go to ASSIGN statement of S4RR.AB
- Delete CO1BRR

b. S4UCR circuit:

- Go to ASSIGN statement of S4UCR.AB
- Delete CO1_ASR + 11NWKPR, 13RWKPR

c. S4HR circuit:

- Go to ASSIGN statement of S4HR.AB
- Delete CO1_ASR + 13RWKPR, 18NWKPR

8. Level Crossing circuit:

a. 23LXPR circuit:

- Go to ASSIGN statement of 23LXPR.AB
- Delete S1ARR-back + 18NWKPR, S1BRR-back, S1CRR-back + 19NWKPR, CO_RR-back.

b. 23LKFR circuit:

- Go to ASSIGN statement of 23LXFR.AB
- Delete S5OVSR, S3OVSR + 18NWKPR, S4OVSR + 19NWKPR, CO1_ASR.

After doing all the above alterations:

- Compile the program and see that there are no errors and warnings and then upload it to the Microlok-II system.
- Then test the Microlok-II system for the alterations effectiveness.

Date: Signature of the trainee