CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The system will have high response and better characteristics than the classical control, also there is no significant difference between the cost of the PLCs and its accessories compared with the cost of relays and the Automatic Voltage Regulators (AVRs).

The reliable components reduce the maintenance cost and also have a long life time compared with the relays which have moving parts that weaken as a result of increase of the operation frequency then the life time reduced.

The system will not affect by the surrounding environment because the PLC designed to work under bad conditions; like vibrations, temperature and humidity. Hence, these are advantages over the computerize control.

5.2 Recommendations

After design implementation of the project there are some recommended as follows:

- Recommended to implementation a project a practically.
- Recommended to use PLC better specifications contains greater than number entrances and exits.

Reference

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[3]*Kuphaldt, Tony R. "Chapter 6 LADDER LOGIC". Lessons in Electric Circuits -- Volume IV.*

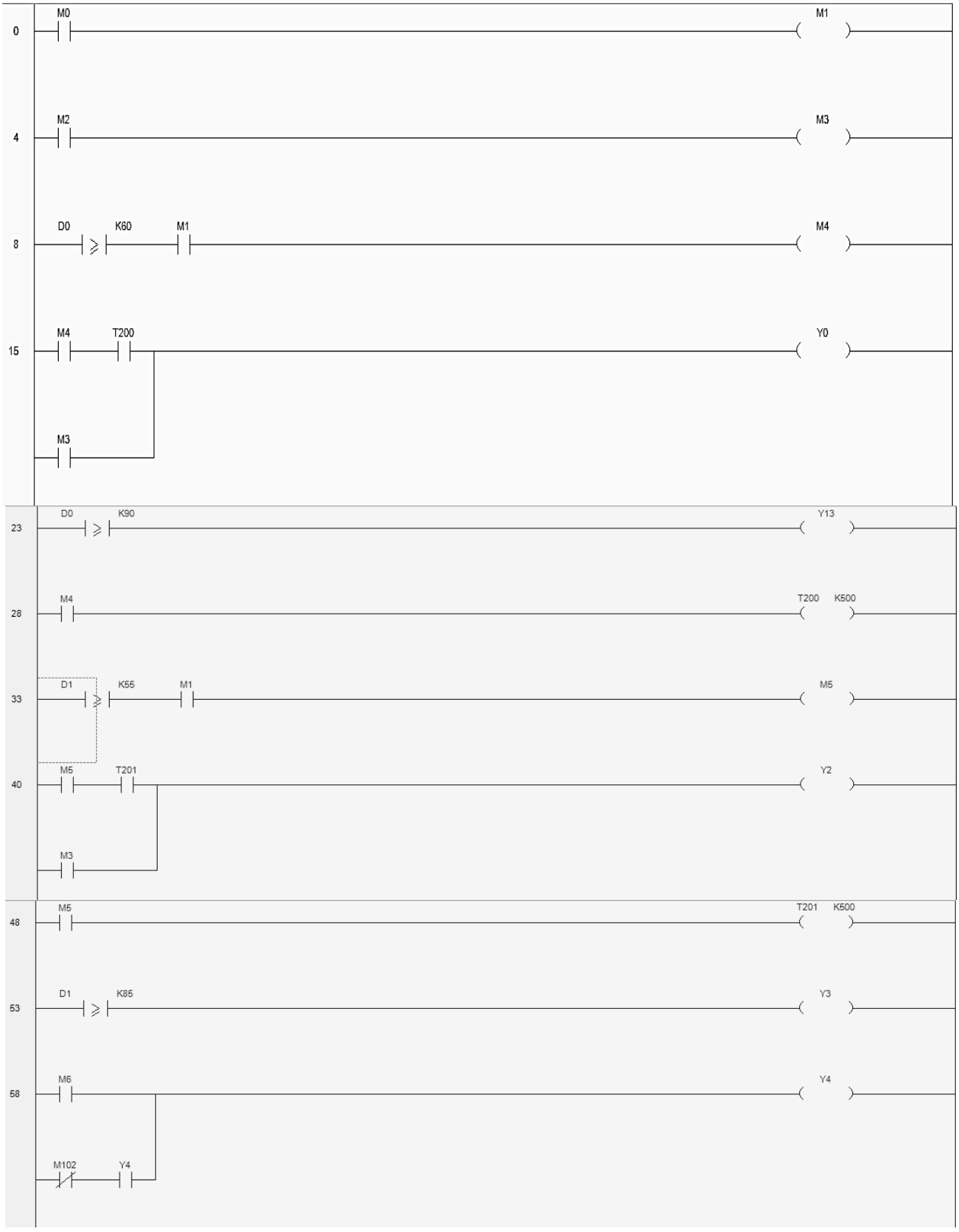
[4]Edward W. Kamen, “*Industrial Controls and Manufacturing”*, Academic Press, 1999.

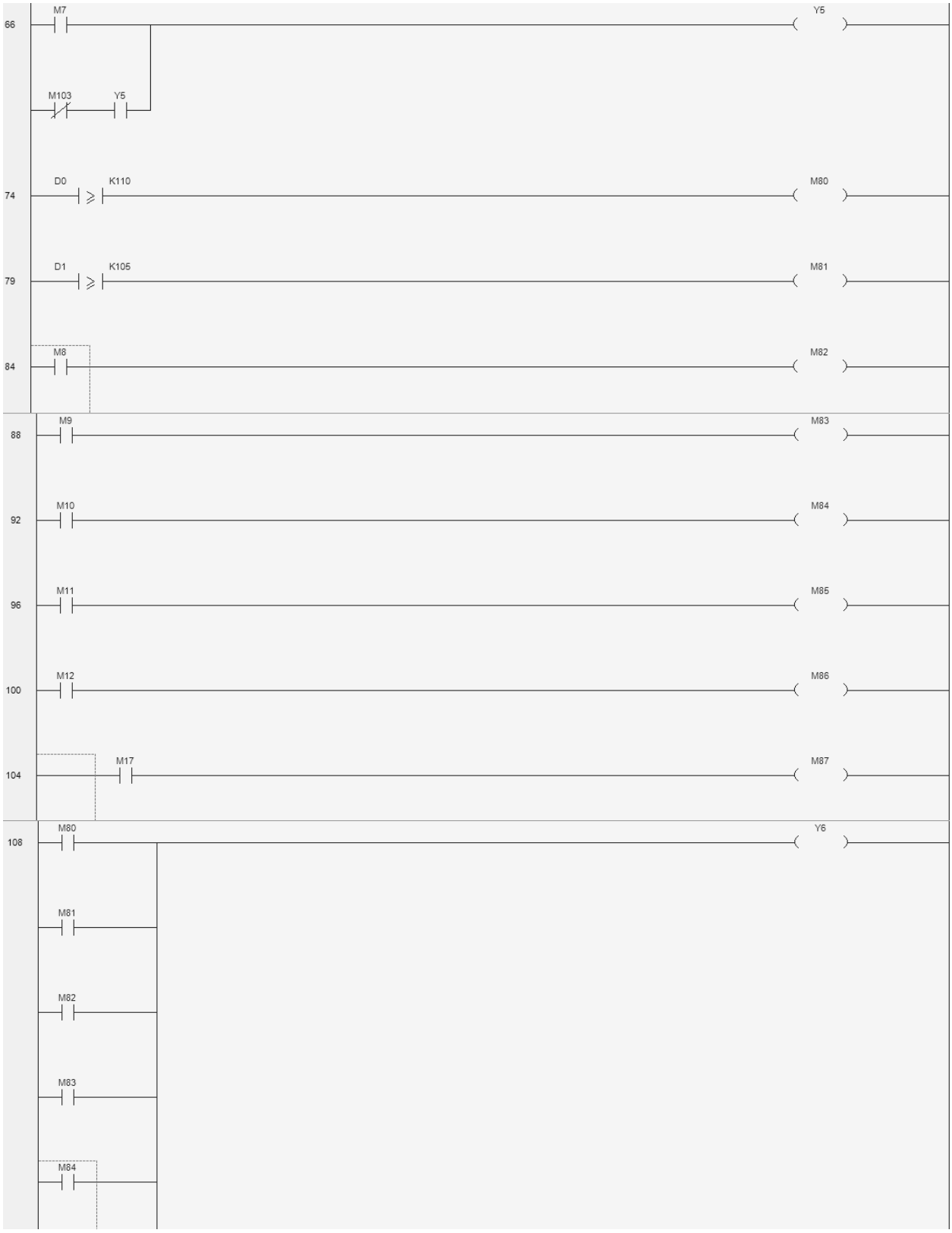
[5] K.A. GANGADHAR, “Electric Power Systems”, Delhi ,1st Reprint, 1999, January

[6] Gupta, “Performance and Design of Alternating Current Machines”, Delhi, Third Edition, 1985

[7] Hugh Jack, “Automating Manufacturing Systems with PLCs”, Version 4.2, April 3, 2003.

Appendices
Appendix A (simulation)

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M103
Y5
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K110
M80
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D1
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M81
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M9
M83
92
M10
M84
96
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M80
Y6
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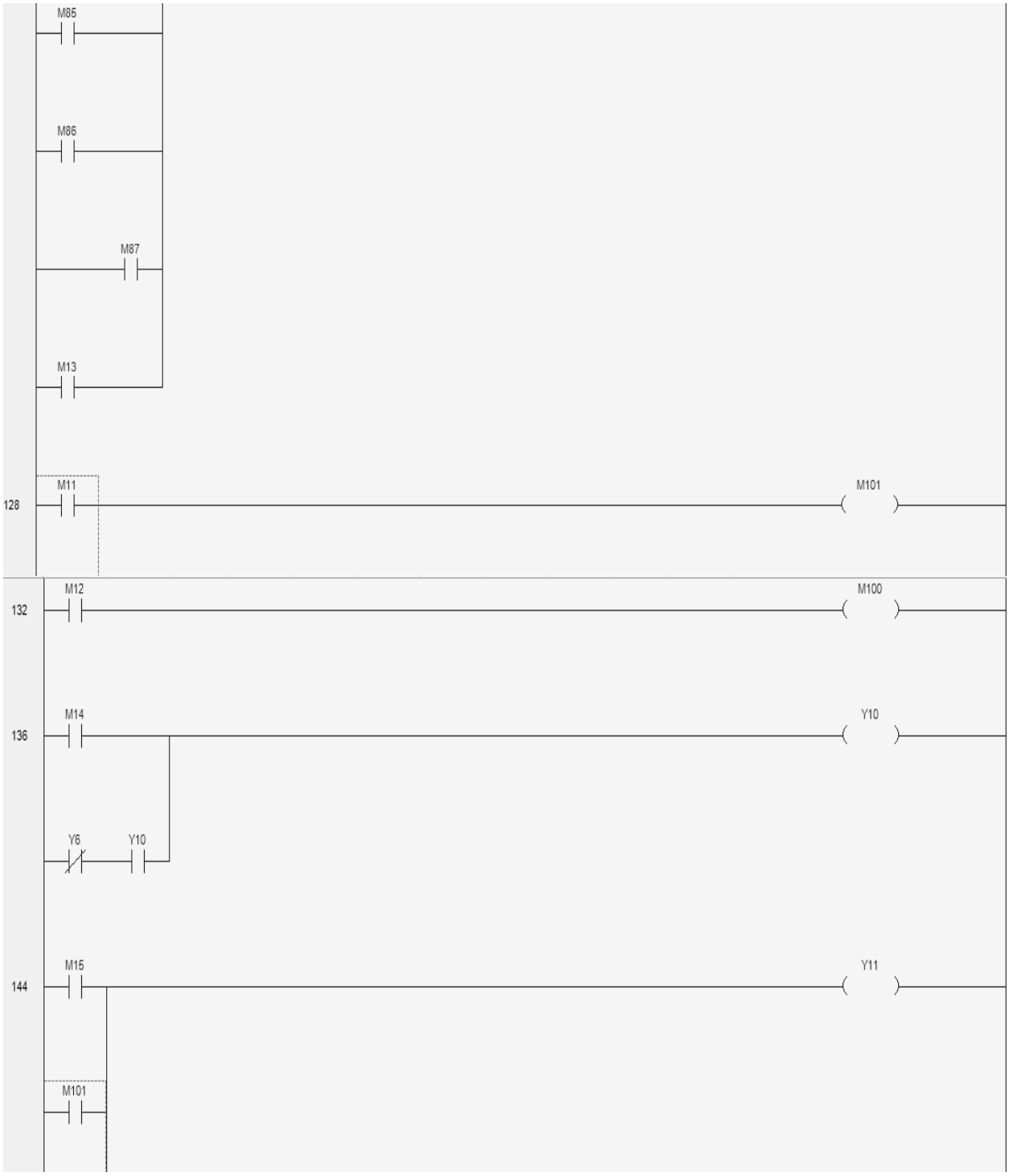
M83
M84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Y10
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Y11
M101


M17
M100
154
M16
Y11
Y12
Y12
162
D3
D
K33000
M49
168
D3
D
K33413
M50
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D3
D
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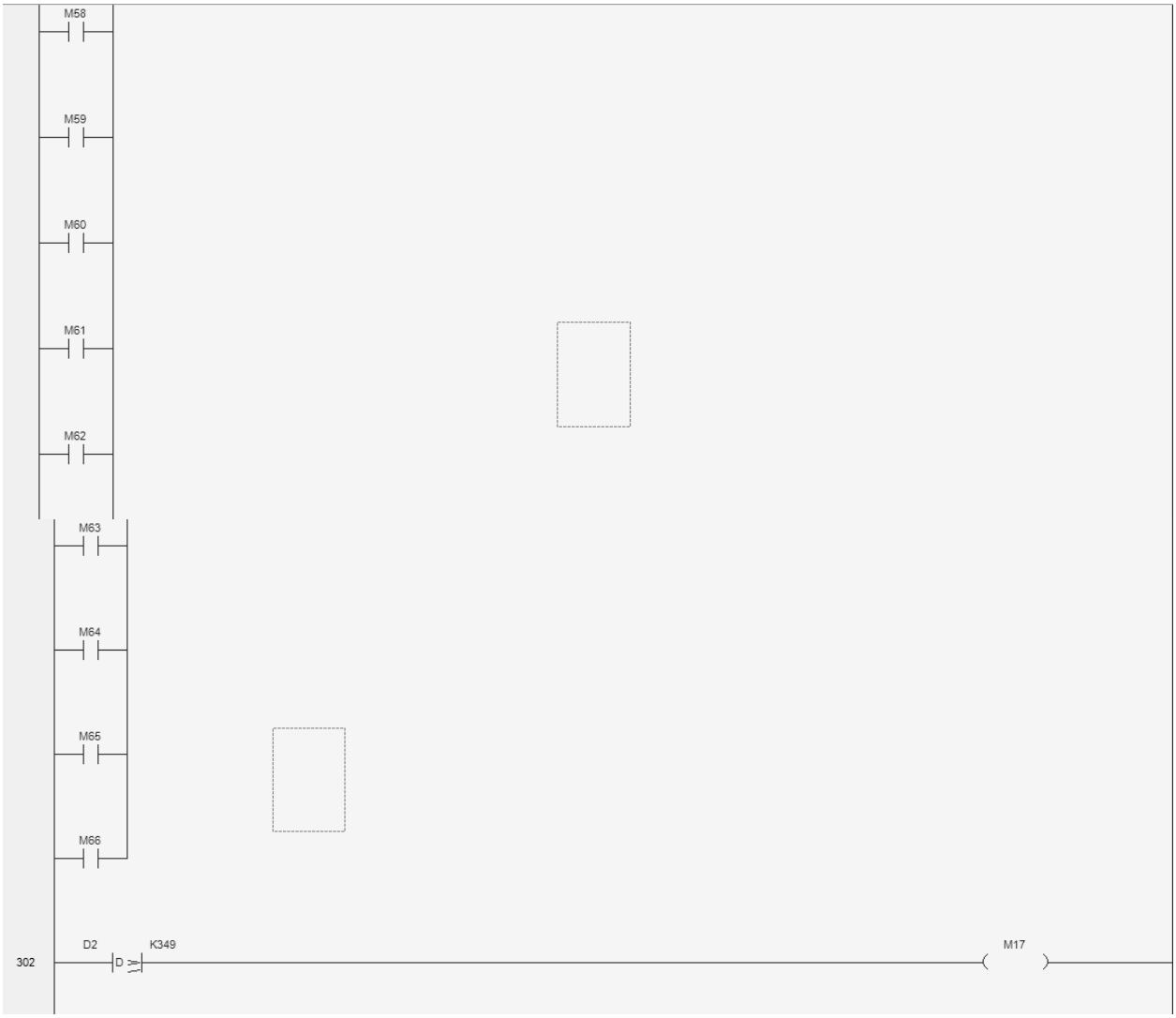
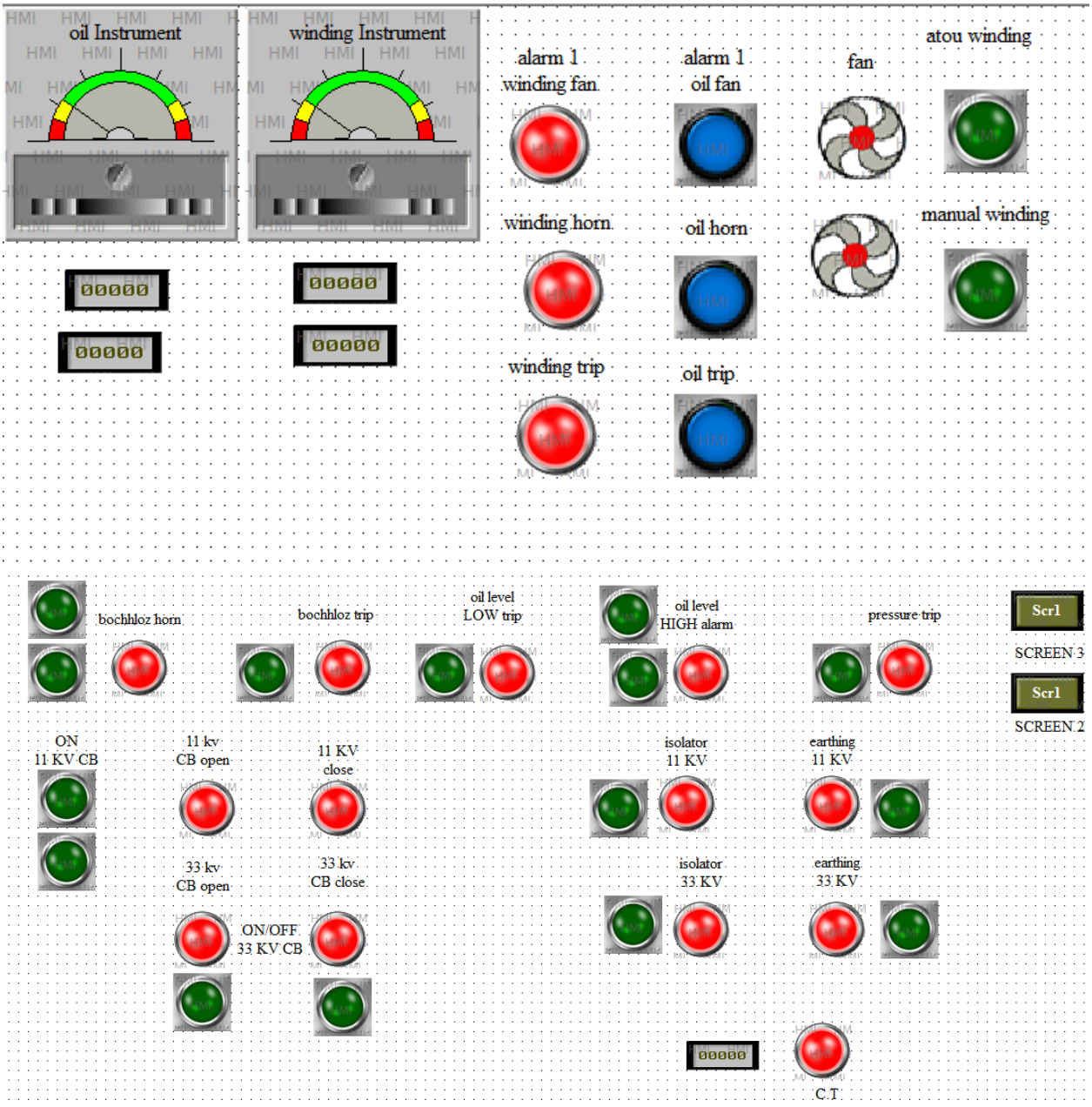


Figure A.1: ladder program of circuit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winding Instrument
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winding fan
alarm 1
oil fan
fan
atou winding
winding horn
oil horn
manual winding
winding trip
oil trip
00000
00000
00000
00000
bochhloz horn
bochhloz trip
oil level
LOW trip
oil level
HIGH alarm
pressure trip
Scr1
SCREEN 3
Scr1
SCREEN 2
ON
11 KV CB
11 kv
CB open
11 KV
close
isolator
11 KV
earthing
11 KV
33 kv
CB open
33 kv
CB close
ON/OFF
33 KV CB
isolator
33 KV
earthing
33 KV
00000
C.T

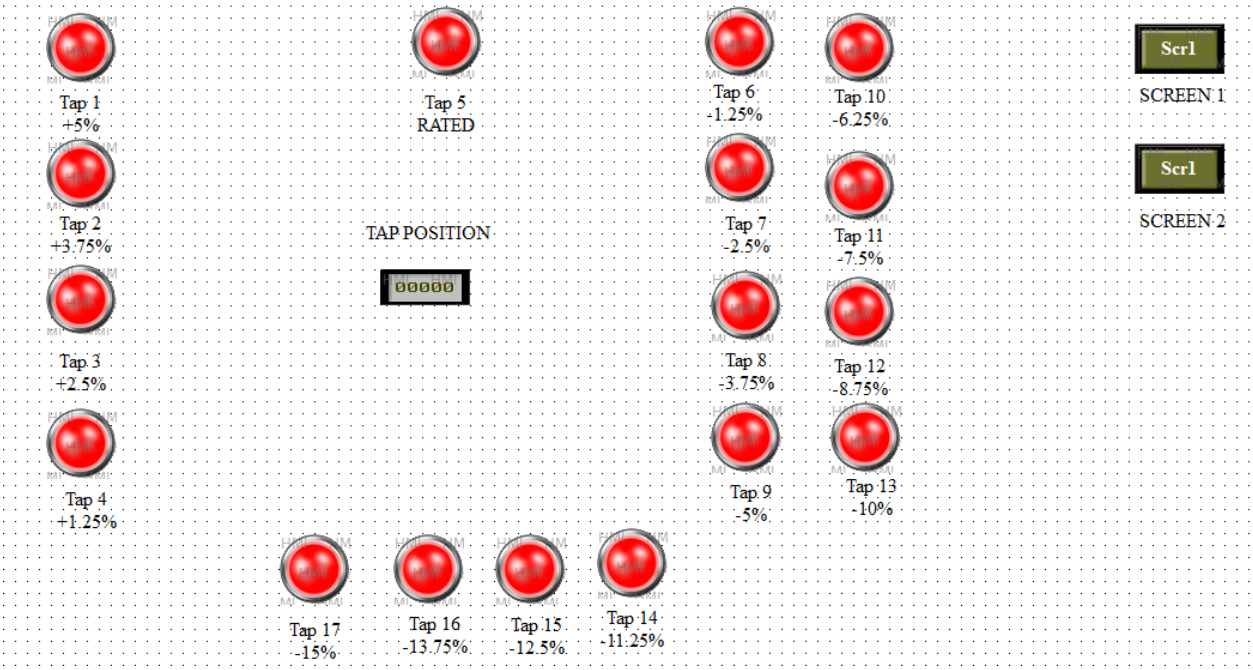

Figure A.2: simulation of circuit

Appendices
Appendix B (contents of transformer)

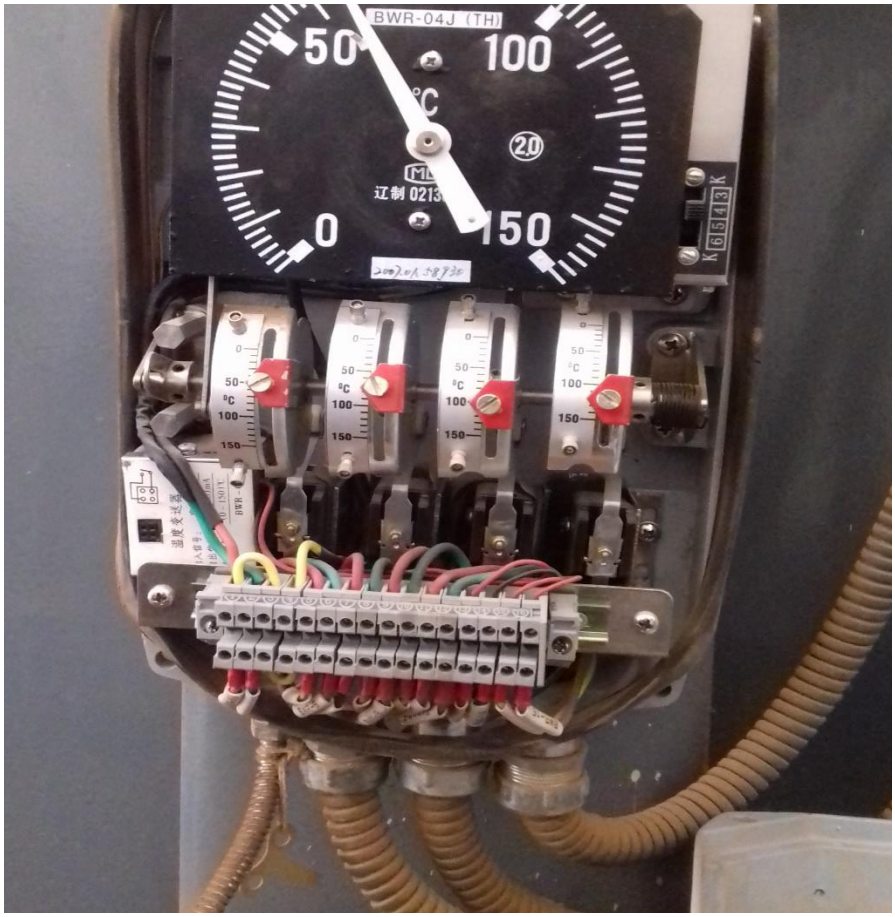

Figure B.1: oil/winding temperature sensor

Figure B.2 : bukhhloz relay

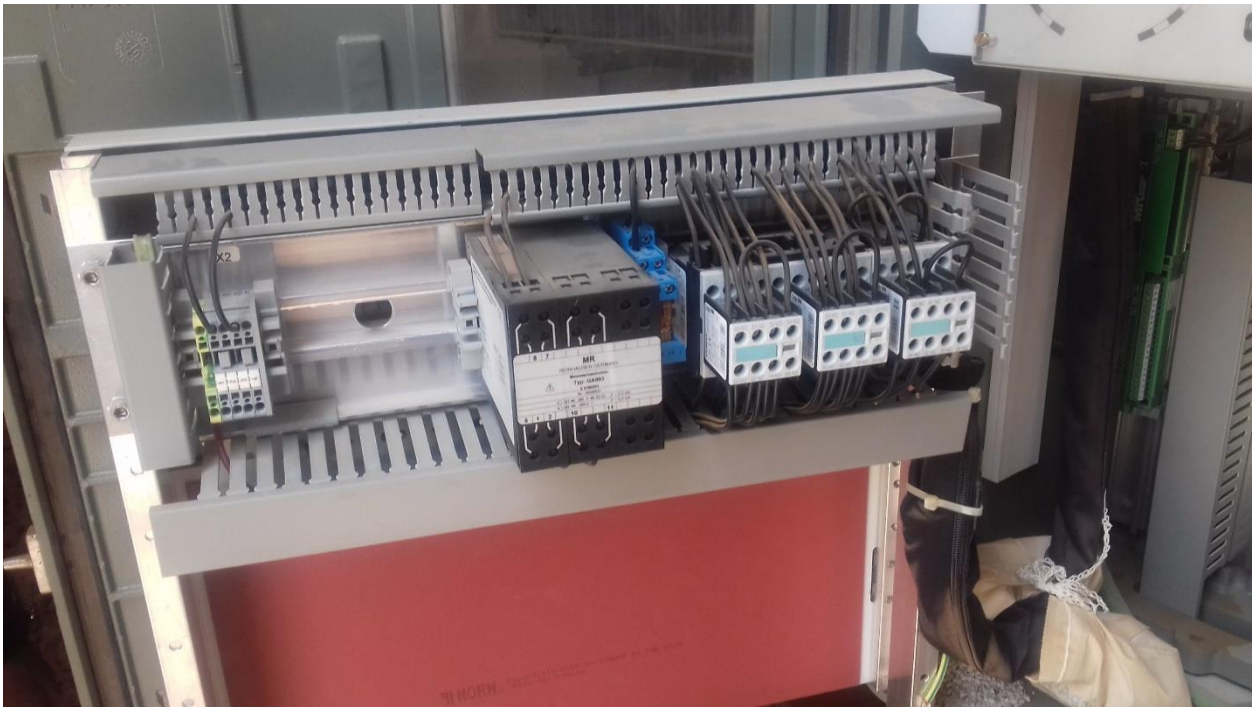

Figure B.3: contactors