

REVIEW OF MASTER THESIS – SUPERVISOR’S REPORT

Author of the thesis: Bc. Jiří Knop

Title of the thesis: Residential Heat Recovery Unit Controlled by PLC

Supervisor of the thesis: Ing. Jan Koprnický, Ph.D.

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|---|----------------------------------|
| A. Fulfilment of the thesis tasks (goals). | B Excellent minus ¹ . |
| B. Abstract quality, keywords match the thesis content. | A Excellent. |
| C. Range and quality of the theoretical research. | C Very good. |
| D. Composition, correctness and completeness of bibliography. | C Very good. |
| E. Solving of the thesis in theory. | C Very good. |
| F. Suitability, adequacy of the methodology. | B Excellent minus. |
| G. The level of processed results and its discussion. | C Very good. |
| H. Author’s contribution to the solved problems. | C Very good. |
| I. Formulation of the conclusion. | B Excellent minus. |
| J. Typographic and language level (incl. grammar). | C Very good. |
| K. Form of the thesis (text structure, sorting of chapters/sections, quality and overview of illustrations/graphics). | B Excellent minus. |
| L. Concrete notes to the thesis: | |

Some citations are not well done. The author cites web page where are many documents. He does not cite the certain one he used (f. i. [19]).

In the research (theoretical) part the student could deal more with recovery units, where he used inappropriate terms “spasmodic ventilation” instead “occasional ventilation”, as well as with the theory of CO₂ sensing according to the detection of the number of persons.

¹ Use this scale of classification:

A Excellent (1), B Excellent minus (1–), C Very good (2), D Very good minus (2–), E Good (3) , F Failed (4).



M. Thesis evaluation:

The student was solving in his thesis actual topic from the field of automation systems of low energy or passive buildings. He was dealing with the control of heat recovery unit by PLC of Teco Company.

This thesis was realized in Laboratory of logic control TK3 at The Institute of Mechatronics and Computer Engineering FM, where the physical system is situated. The student modified electrical installation, designed and developed control algorithm into the PLC. In the final part of the thesis he analysed possibilities of using CO₂ sensors for detection of number of persons in the room.

Based on reading of the report I realized that the topic could be performed in many ways more in breadth and depth. Student however met all tasks and the theme can continue in the future in other student projects.

N. Question for discussion:

- 1. Why did you choose "Circulation heating mode with occasional ventilation" for automatic mode (spasmodic ventilation)?*
- 2. Is it possible the remote control of the model (IP address)?*
- 3. What control systems are usually installed to the heat recovery units of Atrea Company? Do they also enable remote administration?*
- 4. Would it be possible online visualization of measured data of CO₂ sensors?*

O. Overall classification of the thesis:

This thesis meets all requirements for the granting of appropriate academic degree, and therefore I recommend it for defence².

I propose to classify this thesis by **grade C** (Very good, 2).

In Liberec date 7th June 2013

I hereby certify by the signature that I am not in any personal relationship to the author of the thesis.


Ing. Jan Koprnický, Ph.D.

MTI

² Delete invalid