



Data analysis on ventilation systems for energy screening

Schultz, Ole; Christensen, Per; Knudsen, Michael Dahl; Nørby, Jakob; Madsen, Bo Eskerod

Published in:
Sustain Conference 2018

Publication date:
2018

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):

Schultz, O., Christensen, P., Knudsen, M. D., Nørby, J., & Madsen, B. E. (2018). Data analysis on ventilation systems for energy screening. In C. Melero, & K. Mølhave (Eds.), *Sustain Conference 2018: Creating Technology for a Sustainable Society [L-5]* Lyngby, Denmark: Technical University of Denmark (DTU).

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Data analysis on ventilation systems for energy screening

Ole Schultz¹, Per Christensen¹, Michael Dahl Knudsen^{*2}, Jakob Nørby^{*3}, Bo Eskerod Madsen^{*3}

1: Associate Professor, DTU Diplom – EIT osch@dtu.dk, 2: Associate Professor Per Christensen, DTU Diplom -DMP 2*Engineering Århus Universitet, mdk@eng.au.dk. 3*Danish Energy Management, jny@dem.dk, REMONI, bem@remoni.dk.

When energy consultants perform energy screening, they spend many hours inspecting the specific building and collecting data and specifications on installed equipment and the building envelope. Based on this information the consultant advises the building owner about energy saving measures and their savings potential.

By using clamp on temperature and power sensors (Figure 1) (1), it is possible to detect in detail how building systems actually operate without spending hours on inspection and without connecting to the BMS (Building management system). This data can help answer the questions “Is the system operated in accordance with the actual usage?” or “is the performance of the building components as expected?” (2)

The presentation discuss and shows some results from the ESNAP project (3) externally funded by the Danish Energy Agency. We will present some evaluation of the performance – and modeling of the system and its components by using one airflow measurement together with non-intrusive power and temperature measurement of a ventilation system. An ex. in Figure 2 on power dynamics



Figure 1

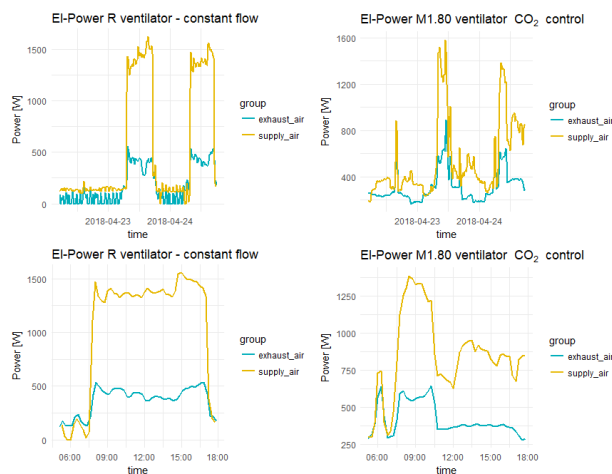


Figure 2

References:

1: https://www.remoni.com/media/1422/data-sheet_powermonispot_ver_200.pdf

2: A review of Methods to match building simulation models to measured data. Authors: Daniel Coakly, Paul Raftery, Marcus Keane, Journal Renewable and Sustainable Energy Reviews p 123 – 141 2014

3. ESNAP Bo Eskerod Madsen (REMONI), Ole Schultz, Per Christensen)(DTU Diplom),Michael Dahl Knudsen (AU),Jakob Nørby (Danish Energy Management) 2018-2019.