

Accepted Manuscript

Title: A machine learning bayesian network for refrigerant charge faults of variable refrigerant flow air conditioning system

Authors: Min Hu, Huanxin Chen, Limei Shen, Guannan Li, Yabin Guo, Haorong Li, Jiong Li, Wenju Hu



PII: S0378-7788(17)33313-3
DOI: <https://doi.org/10.1016/j.enbuild.2017.10.012>
Reference: ENB 8031

To appear in: *ENB*

Received date: 23-5-2016
Revised date: 24-9-2017
Accepted date: 3-10-2017

Please cite this article as: Min Hu, Huanxin Chen, Limei Shen, Guannan Li, Yabin Guo, Haorong Li, Jiong Li, Wenju Hu, A machine learning bayesian network for refrigerant charge faults of variable refrigerant flow air conditioning system, Energy and Buildings <https://doi.org/10.1016/j.enbuild.2017.10.012>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

A machine learning bayesian network for refrigerant charge faults of variable refrigerant flow air conditioning system

Min Hu¹, Huanxin Chen^{1*}, Limei Shen¹, Guannan Li¹, Yabin guo¹, Haorong Li², Jiong Li³, Wenju Hu⁴

¹Department of Refrigeration and Cryogenic, Huazhong University of Science and Technology, Wuhan, China

²Durham School of Architectural Engineering and Construction College of Engineering, University of Nebraska-Lincoln, Omaha, ME, USA

³State Key Laboratory of Compressor Technology, Hefei General Machinery Institute, Hefei, China
⁴Beijing Municipality Key Lab of HVAC&R, Beijing University of Civil Engineering and Architecture, Beijing, China

Highlights

- Bayesian belief network(BBN) is introduced in fault diagnosis process of variable refrigerant flow(VRF) air conditioning system.
- Two typical faults, i.e. refrigerant leakage and refrigerant overcharge, were studied and performance data were used to evaluate this diagnosis network.
- During diagnosis procedure, the order of input evidences has an effect on the diagnosis efficiency.
- Apart from physical data of basic components, the conditions of other parts, such as compressor engine and accumulator, should be taken into consideration when diagnosing faults.

Abstract: An intelligent fault diagnosis network for variable refrigerant flow air conditioning system is proposed in this study. The network is developed under the foundation of bayesian belief network theory, which comprises two main elements: the structure and parameters. The structure obtained by machine learning and experts' experiences illustrates the relationships among faults and physical

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات