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英文論文名稱: Development and Verification of a Thermodynamic Model on Chiller Performance v

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[摘要]

工業用冰水主機設計蒸發器的冰水流量都是在固定流量下運轉，但是隨著整體能源使用最佳化考慮，VPF(variable
消耗的減少，將使愈來愈多的空調冰水系統直接改變經過冰水主機蒸發器的冰水流量，使冰水可變流量節能具體化
在VPF系統應用中，變冰水量冰水機爲了配合負載需求而採用變冰水量的模式來配合卸載，因此需要發展在變冰水
VPF不同運轉條件時的性能行爲，並提供現場變冰水量冰水主機故障檢測、診斷及性能的改善空間以做系統效率提
通用冰水機熱力學模式發展成爲變冰水量之冰水主機熱力模式並與Gordon-Ng通用冰水機熱力學模式作爲冰水機運
據檢驗上述模式，藉以確立本文所發展新模式之適用性。綜合研究結果發現：創新的變冰水量熱力模式(Model-1)與
方根誤差（RMSE）平均約低於10.1%及相對均方根誤差(R-RMSE)平均也約低於10.4%。比較後證明變冰水量之冰
經驗模式。

[英文摘要]

Design of evaporator chilled water flow rate for industry is based on operation under constant flow rate. Consider
the energy consumption and reducing the chilled water through evaporator, and thus energy consumption both in
unload according to the thermal loading by variable chilled water flow rate. A experimental model is developed to
performance. And the model can be also used as the tool of chiller troubleshooting, diagnosis, and performance
constant water flow rate is redeveloped for variable water flow for the chiller characteristics model. The verificatio
state.Both experimental models are verified by statistics R2, RMSE, R-RMSE. Based on the 11 steady state data
Gordon-Ng will be worse than Gordon-Ng model, in some circumstances. On the average, the predictive accurac
simplified model is worse. The results can be a reference data for chiller capacity control, performance prediction

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