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A COMPONENT TESTING SYSTEM SIMULATION (CTSS) METHOD FOR CHARACTERISING SOLAR AIR-CONDITIONER PERFORMANCE

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ABSTRACT

Solar desiccant air-conditioning is an emerging technology that offers the promise of reducing reliance on grid connected electricity for providing comfort air-conditioning. Development of a method of assessing the seasonal energy savings of these devices would enable a fair comparison with alternative devices. This could be used in policy support mechanisms to assist industry growth. Here we describe the application of the Component Testing System Simulation method to predict the energy savings of solar air-conditioners using the same approach as that applied successfully in the Australian solar hot water industry. The CTSS approach is made possible by the development of a new simplified generic model of the desiccant air-conditioner component. The performance of the generic model is evaluated for five different air-conditioner designs. The results suggest that the approach is valid for estimating the annual energy savings. The method will be documented in a provisional Australian Standard to be released in 2013.

KEYWORDS

Desiccant wheel, solar air-conditioning, standard, rating, CTSS, Industry support programs

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