ABSTRACT

Working in an environment where the temperature is too high or too humid can reduce the body's physical abilities and cause fatigue too early, while at too low a temperature can cause stiffness in the body. The ideal room air has a temperature range of about 18°C - 28°C and humidity is around 40% - 60%. This research will make room temperature control on human movement based on PIR sensor and DHT22 sensor. LoRa sends sensor output data to the LoRa gateway, then forwards the data to Antares. The results of the calibration of the DHT22 sensor obtained an average accuracy value of 99.7% and the results of testing the accuracy of the PIR sensor can only detect movement with a distance of 5 meters and the detection angle is 120^0. The temperature control testing room is divided into three rooms, room one contains 10 people, room two and room three contains one person. The method used is On-Off Controller. If human movement is detected and the room temperature is > 25^0C, the fan will turn on. The actuator works well to lower the room temperature. Effective data transmission has an RSSI value of -97.8 dBm and an SNR value of -0.3 dB. The effective distance for indoor delivery is within 50 meters. For the QoS value, namely packet loss of 0% with a very good category.

Keywords: Distance, Humidity, Infrared, Movement, Temperature