ABSTRACT

Non-intrusive techniques of flow measurement are very useful in several applications. Nowadays, several studies have been conducted to develop non-intrusive measuring techniques that can overcome the shortcomings of the existing ones. This work aims to design an intelligent non-intrusive flow meter device based on the forced heat convection principle (thermal). This device uses two commercial RTD transducers (PT100), one is used as reference of temperature set-point, and the other is responsible for the flow measurement. A neural network is responsible for correcting the errors in relation to the calibration standard. To evaluate the intelligent flow meter, test bench was built. In order to provide another flow meter to compare the results, an ABNT Venturi type flow meter was installed in the test bench.

Keywords: Non-intrusive. Forced Convection. Flow Measurement. Neural Network. Calibration. Adjust.