

Abstract

In this paper, an efficient fuzzy model-based leak detection algorithm is designed for a pilot heat exchanger. A dynamic fuzzy model of the physical plant is first derived from input-output measurements using a fuzzy clustering technique. This model is run in parallel to the process for symptom generation. The leak detection mechanism has been tested and validated on the real co-current heat exchanger, and has proven to be efficient in detecting leaks of different magnitudes in the water circulation pip