

# Monitoring Steam Traps Using Wireless Technology

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The purpose of this paper is to demonstrate one of the useful applications of wireless technology for industrial plants. This application is to use wireless transmitters to monitor steam traps continuously. This application can provide an economic solution for a common problem that industrial plants face, which is the loss of large amounts of steam energy due to passing steam traps.

In average, about 10% of steam traps in a typical plant malfunction that causes a loss of a huge amount of energy. The malfunctioning steam traps may vary from cold traps that will not open at the specified set point and create poor quality, hazardous wet steam, to passing traps that waste energy and also cause a hazard. Usually, plants are used to make a periodic steam-traps survey manually to identify. This practice by itself adds an extra cost and also it will not find out the problem until the next survey that may take several months.

Using a wireless technology can provide a practical and economic solution to resolve this problem. Wireless transmitters can be used through the use of a combined with a radio frequency transceiver. Steam leaks typically generate high frequency waves that closely match the response of the wireless sensor that can be detected and fixed as soon as it occurs.

This method enhances the reliability and the safety of the plant, but the main advantage of using wireless technology for monitoring steam traps is the economic saving from two perspectives. First, it cuts the losses of energy immediately as it will provide a continuous steam-traps monitoring. Second, the cost of implementing this technology is more economic compared with the cost of energy losses and periodic manual inspection of steam-traps.