

ABSTRACT

Diesel engines used in many sectors require clean fuel quality to achieve good engine performance. To maintain fuel cleanliness, a filtering process is carried out using a filter element. Measuring fuel quality before and after filtration is important information for users to make decisions to reduce maintenance costs and overall operational costs. From the existing problems, researchers aim to develop a tool that functions to identify the cleanliness quality of diesel fuel in accordance with ISO 18/16/13 cleanliness standards and the performance of the filter elements used in working condition or not. This module uses a PLC and HMI for the display and a pressure transmitter for the measuring module which aims to be a ready-to-use tool for industrial and mining conditions. This module will help users as an initial system that issues quality information from filtered diesel fuel and estimates the performance of the filter used. The process of measuring fuel quality takes less than 15 minutes and the results are displayed directly on the HMI screen, this is faster than lab measurements which take more than one day

Keywords: Diesel, Filter element, Sensor, PLC, HMI