

ABSTRACT

The high needed for energy results in increased monthly operating costs at PT. Komatsu Remanufacturing Asia. The increase in operational costs for electricity will continue to increase along with the electricity tariff per year. Efforts made to reduce costs from the use of electrical energy are by installing inverters which require very large costs. aims to reduce electricity costs and analyze the cost of returning capital. The inverter used is the ABB brand with a capacity of 4kW, 5.5kW, 22kW and 45kW, with a voltage of 380V. The inverter installation points are in the Metal Spray, Compressor and Blasting Area areas. Calculation and data collection of electrical motor consumption using an avometer. Consumption data in a year using metal spray motors reaches 61,276 kW/year at a rate of Rp. 70,099,744 kWh/year. After installing the data inverter, 44,129 kWh/year is obtained at a rate of Rp. 49,159,706 kWh/year, can save 27.98%. Based on the data obtained before using the inverter, the maximum power obtained from the metal spray motor load reached 24.55kW and after installing the maximum power inverter obtained was 17.68kW. This is because the surge current on the motor is converted into a soft starter using an inverter. Based on calculations and analysis of electrical energy using metal spray motor loads, compressors and blasting within 1 (one) year it can save electricity costs around 27.98% for metal spray motor loads, 31.8% for compressor motor loads, and 28.8 % for blasting motor load. In order to develop further research using the same brand of inverter but has a complete configuration so that the desired parameters can be displayed.

Keywords: Study of Power Flow, Short Circuit, Power Losses, Inverters