

***MODIFICATION OF AIR COMPRESSOR CONTROL PANEL
WITH DIRECT ONLINE (DOL) SERIES ON RO PLANT 250 WT-
10 AT PT. INDAH KIAT PULP & PAPER***

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ABSTRACT

Modification of the air compressor control panel with a Direct OnLine (DOL) circuit was carried out to improve the reliability of the motor drive system in the water treatment unit. The results of this control panel modification are simpler, easier to operate, and effective in maintaining the stability of the air compressor's performance, thereby ensuring the continuity of the Reverse Osmosis (RO) process at the RO Plant 250 WT-10 at PT. Indah Kiat Pulp & Paper. The three-phase induction motor used has a power rating of 7.5 kW, a nominal current of 16.2 A, a power factor of 0.88, and an efficiency of 88.1%. Theoretical calculations indicate a current of 14.7 A, while measurements during motor operation show an average current of 12.3 A, or approximately 75.5% of the nominal current. This condition indicates that the motor operates safely and efficiently, and is protected by an Electric Over Current Relay (EOCR) set at 16 A to prevent overloading, current imbalance, or loss of one phase.

Keywords: Control panel, Air compressor, Direct OnLine (DOL), EOCR, Three-phase induction motor.