

ABSTRAK

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MODIFIKASI SISTEM KENDALI *CENTRIFUGAL COMPRESSOR* BERBASIS PLC DAN HMI DI DEPARTEMEN UTILITY PT XYZ

Skripsi, Fakultas Sains dan Teknologi (2022).

(xv + 73 halaman; 62 gambar; 3 tabel; 3 lampiran)

Salah satu tugas *Utility Department* PT XYZ yaitu menjaga kestabilan suplai udara bertekanan untuk proses produksi ban. Suplai udara bertekanan dihasilkan dari mesin *compressor*. Pada *Utility Department* terdapat berbagai jenis *compressor*, salah satunya adalah jenis *centrifugal compressor*. Namun, seringkali terjadi permasalahan *electrical* pada *compressor* tersebut seperti *blank screen*, *starter failure*, pembacaan parameter yang *error*, dan sebagainya. Oleh karena itu, peneliti tertarik untuk melakukan modifikasi sistem kendali *centrifugal compressor* berbasis PLC (*Programmable Logic Controller*) dan HMI (*Human Machine Interface*) di Departemen Utility PT XYZ. Modifikasi sistem kendali dilakukan dengan mengetahui terlebih dahulu parameter-parameter pada *centrifugal compressor*, menentukan komponen, merancang *wiring diagram* dan program PLC, perakitan panel dan pengujian panel terhadap mesin. Hasil dari penelitian ini adalah terbentuknya sistem kendali *centrifugal compressor* berbasis PLC dan HMI. Sistem ini diharapkan memberikan kemudahan kepada operator dalam hal operasional dan juga bagi teknisi dalam hal perbaikan sistem kendali.

Kata Kunci : *Centrifugal Compressor, PLC, HMI*

Referensi : 7 (2004-2014)

ABSTRACT

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MODIFICATION OF CENTRIFUGAL COMPRESSOR CONTROL SYSTEM BASED PLC AND HMI AT UTILITY DEPARTMENT PT XYZ

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(xv + 73 pages; 62 figures; 3 tables; 3 appendices)

One of the tasks of PT XYZ's Utility Department is to maintain a stable energy supply for the tire production process. Pressurized air is one of the energy that is needed in supporting the tire production process at PT XYZ. Compressor is a machine used to generate pressurized air, which is then supplied to the tire production process. In the Utility Department there are various types of compressors, one of which is the type of centrifugal compressor. However, electrical problems often occur on the compressor such as blank screens, starter failures, error parameter readings, and so on. Therefore, researchers are interested in modifying the PLC (*Programmable Logic Controller*) and HMI (*Human Machine Interface*) based centrifugal compressor control system at Utility Department of PT XYZ. Modification of the control system is done by knowing in advance the parameters on the centrifugal compressor, determining components, designing wiring diagrams and PLC programs, assembling panels and testing panels on machines. The result of this research is the establishment of a PLC and HMI-based centrifugal compressor control system. This system is expected to provide convenience for operators in terms of operations and also for technicians in terms of repairing control systems.

Keywords : *Centrifugal Compressor, PLC, HMI*

Reference : 7 (2004-2014)