

**EMBEDDED SYSTEM DESIGNED FOR DE-DUSTING UNIT
OF BLAST FURNACE # 6 OF BHILAI STEEL PLANT
FOR FAULT RECOGNITION AND SEGREGATION IN
SEAL AIR FAN WITH ON-LINE FACILITY FOR PROGRAMMING
USING VISUAL BASIC**

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Abstract

Safety and reliability are important requirements in man-made dynamical systems. These requirements apply specially to safety-critical systems. The early recognition of faults can help to avoid system shut-down, breakdown and even catastrophes involving human and material damage.

Under any circumstances, advanced methods of supervision, error recognition and error diagnosis have become increasingly important for the enhancement of trustworthiness, immunity and efficiency of most of the technical processes. This holds especially for safety related processes like aircraft, trains, automobiles, power plants and chemical plants. The classical approaches are limit or trend checking of some measurable output variables. As because they do not give a deeper insight and usually do not allow a fault diagnosis, model-based methods of fault recognition were developed by using input and output signals and applying dynamic process models. Functions carried out in this System

- √ Monitoring: Measurable variables are checked with regard to tolerances, and alarms are generated for the operator.
- √ Supervision with Fault Diagnosis: Based on measured variables, features are calculated, symptoms are generated via change recognition, a fault diagnosis is performed and decisions for counteractions are made.
- √ Automatic Protection: In the case of a dangerous process state, the monitoring function automatically initiates an appropriate counteraction.

The fault recognition and segregation system consists of basic building blocks that support such systems through the development of fault diagnostic methods. The protection system relays and auxiliary relays also provide signals to alarm and annunciation system.

Keywords: Fault Recognition, Fault Segregation, De-Dusting, Seal-Air Fan