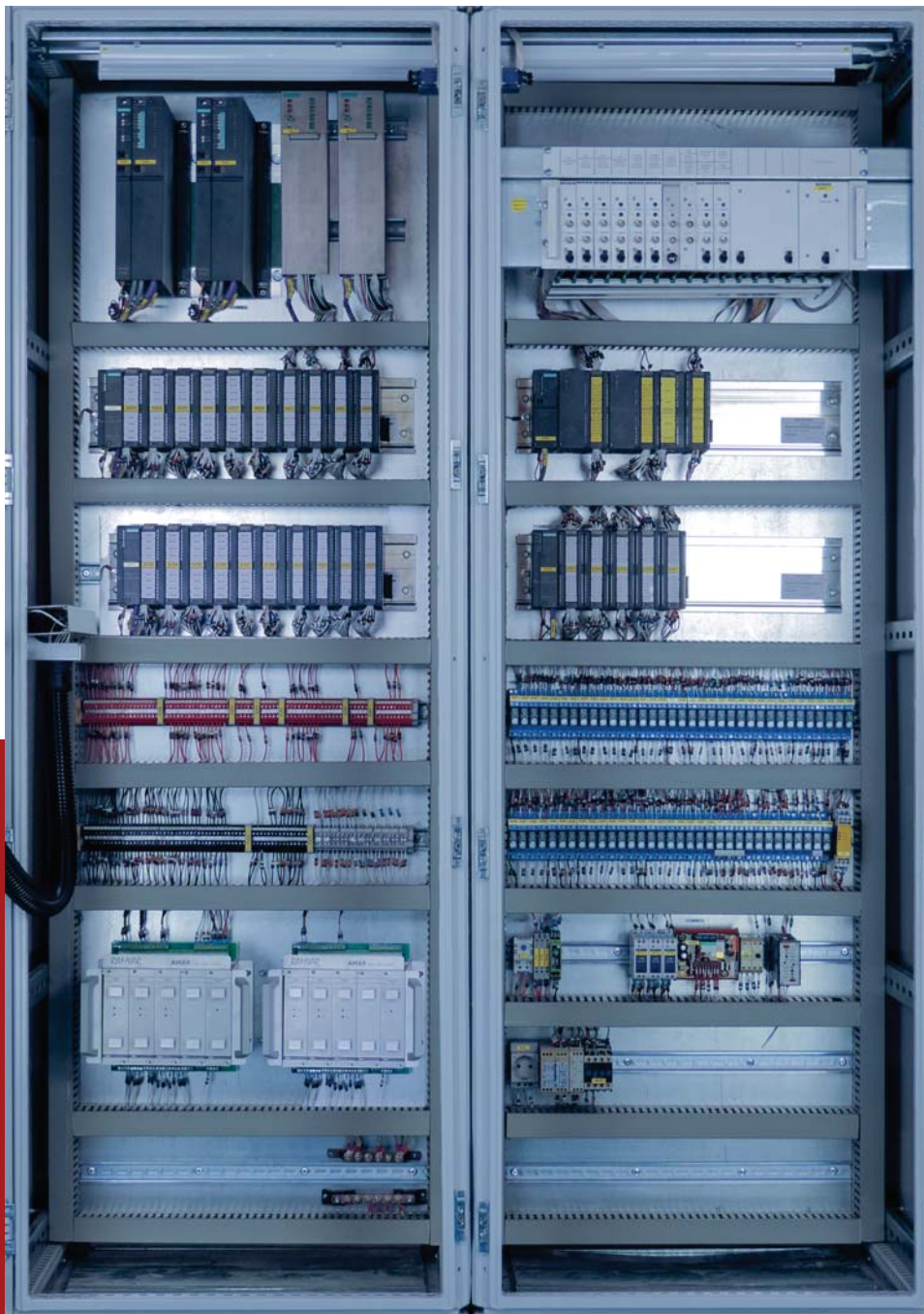




Turbine Control System Catalog



Introduction

This product is a specialized controller for implementation on different types of turbines including turbogenerator, turbo pump and turbo compressor. This product performs all the processes of a gas or steam turbine, such as control, protection, monitoring of all processes, monitoring and implementation of operating commands.

This system is designed to be used in terms of workload in a wide range of turbines (for example, in power plant industry from 5 MW to 320 MW). It can be installed on any type of turbine, regardless of the type and brand of the manufacturer.

Gas and steam turbine control systems such as Speedtronic, Hitachi, Mitsubishi, Acec, F5 and F9 turbines, LMZ, Franco Tossi, etc. are examples of units which their control system can be replaced by This control system.

It is a control system based on PLC and can be run with different hardwares. It is implemented with Siemens S7-400 hardware. In this system, the main logic and philosophy of the old control system is preserved, but the protection levels are updated and the possibility of adding new protection levels will be available to the employer. Customization is a prominent feature of this product and allows the customer to select and order turbine control system facilities and capabilities according to their needs.




Capability of connecting this system to office networks (in order to report for managers) as well as connecting to upstream networks such as dispatching, sending and receiving the required information by various protocols can be easily accomplished and implemented.

It is applied in almost all turbines performing in industry. The turbines on which Ramyar can be implemented and installed are as follows:

1. Gas unit turbines
2. Steam unit turbines
3. Combined cycle units
4. Turbo pumps
5. Turbo compressors

Features

- ◆ Compatibility with all types of turbines
- ◆ Utilizing the latest control system equipment and instrumentations
- ◆ Customizing Facilities and equipment
- ◆ Redundancy at the CPU, inputs, outputs and communication network level
- ◆ The main control and protection system of the S7-400 classification
- ◆ Implementation of Safety according to IEC61508 standard
- ◆ Powerful monitoring system
- ◆ Archiving and reporting system
- ◆ Hardware & Software trouble shooting
- ◆ High network, programming and cyber security
- ◆ Convenient repairing facilities and control system settings
- ◆ Easier analysis of control system function using monitoring facilities
- ◆ Determining different access levels for safe operation
- ◆ Exhaust temperature control with an accuracy of 1°C and removal of thermal stresses in automatic start-up mode
- ◆ Turbine speed control with 0.01 rpm accuracy
- ◆ Load control in unit synchronization
- ◆ Smart fuel exchange algorithms without any load changes
- ◆ Smart algorithm for calculating turbine temperature from exhaust temperature
- ◆ Gas turbine temperature protection independent of temperature control
- ◆ Vibration protection and monitoring of turbines and generators
- ◆ Over speed protection of the turbine as 2 out of 3 and independent of software and control system
- ◆ Creating fully automatic startup and shut down mode

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