

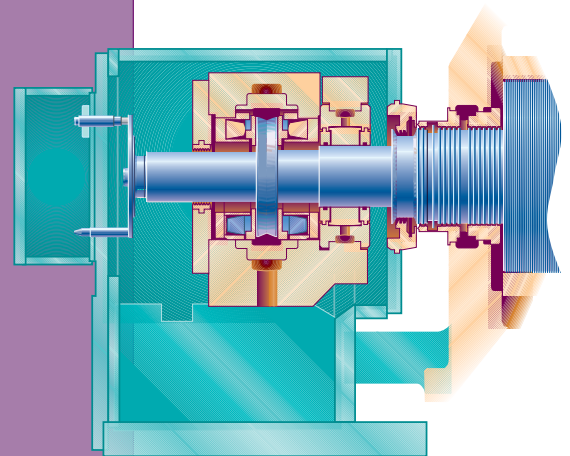
Control System Upgrade from Mechanical to Electronic

Benefits

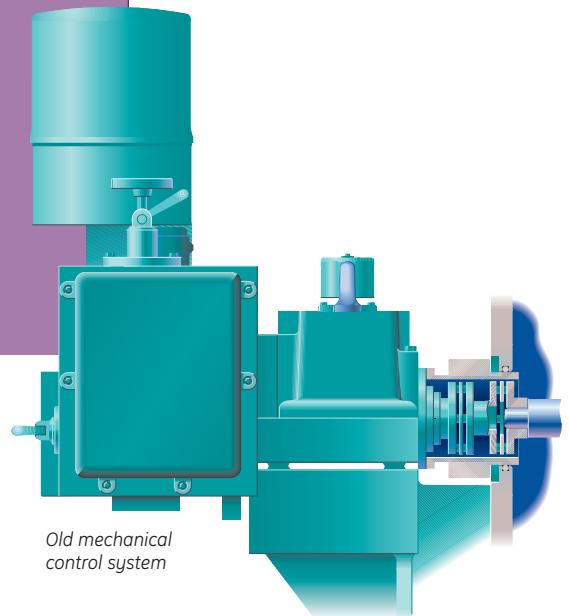
- Increased production
- Higher efficiency
- Compliance with environmental regulations
- Availability and Reliability
- Life extension

This control panel introduces a number of significant benefits including:

- Substantial improvements in availability, reliability and safety of the turbine
- Powerful tools requiring minimal operator training (all information and commands are on the Human Machine Interface)
- More stable operation in case of load variations
- Minimal costs to change control logic or operating parameters
- Standardization of components (only a few spare parts are required)
- Machine diagnosis through trend history
- Minimal control system modification costs
- Organization of pages according to ergonomic principles
- Standardization of system components (spare parts ready to ship) in order to minimize panel maintenance time
- Possibility of data link with remote supervision system (via modem, when feature is included in the panel)
- Ease of operation, helps personnel become familiar with the machine so that highly trained experts are not required



*New electronic control system
with pickup plate*



*Old mechanical
control system*

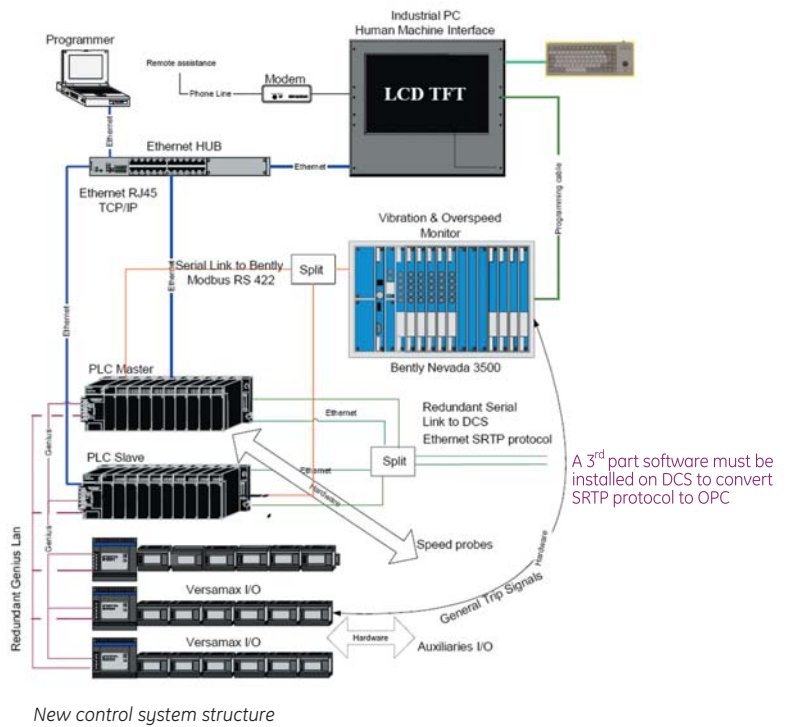


What it is

The Unite Integrated Control System (UNICOS) is a PCL (Programmable Logic Control) based integrated control system; one of the major advantages of this system its great versatility that makes it capable of covering many customer-specific requirements.

The UNICOS Control System is based on a programmable logic controller simplex or redundant architecture that is provided with GE FANUC, SIEMENS and ALLEN BRADLY hardware. All the control routines reside in the PLC. The UNICOS control system includes:

- PLC simplex or redundant CPU
- Bently Nevada 3500 vibration, axial displacement and over-speed monitor
- Operator interface (Human Machine Interface)
- I/O modules
- Ethernet hub
- Serial splits
- Modem
- Serial communication modules



How it works

The system can provide a large quantity of data related to the operability of the machine. Data is displayed so as to provide the operator with more complete and easier access.

The system can be configured with the following features:

- Process flow diagram
- Unit controls with status displays to start/stop the steam turbine, compressor, auxiliary motors and heaters
- Turbine speed controller
- Anti-surge controller
- Other process and auxiliary

controllers

- Process data monitoring including display of process PD&I diagram for the anti-surge system
- Display of alarms
- Shutdown displays
- PLC set point adjustment
- Hour meter
- Event recorder

The system can be controlled from different locations through multiple workstations that can be installed to provide operational flexibility for the train. Operators have easy access to

all control functions through the HMI which these organized in pages. The layout of these pages can be customized based on plant configuration and customer needs. The PLC is preprogrammed before the panel is shipped and includes an RS422 serial communication interface with standard Modbus protocol for connection to a supervision and control system (i.e., DCS, PC, telemaintenance), power supply, CPU, and the serial communication and I/O cards can be redundant in order to assure higher reliability.



GE imagination at work

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