

## Quick Direct Connect (QDC) Turbine Control Solution

# fact sheet

When availability and reliability are essential to the success of your power plant, cutting edge turbine controls technology is critical. Obsolete, older technology can make securing spare parts and repair services difficult – problems that can lead to extended maintenance outages and increased operating costs.

GE Energy's Quick Direct Connect (QDC) turbine control solution combines the Woodward™ AtlasPC™ Control System and “plug and play”, simplistic installation services. The end result is an integrated, state-of-the-art control system that is straightforward to install.

Plug and play installation technology decreases cycle time and reduces potential rewiring errors. The QDC solution can decrease your installation time by up to 80 percent, which saves both time and money, and makes GE the smart solution.

The AtlasPC Control System provides performance-enhancing features, such as network-ready hardware, a Real-Time Operating System and an enhanced programming environment, including self-documenting capabilities. These technology improvements provide the real-time data needed to make informed plant management decisions. The AtlasPC is also capable of communicating with other plant asset management platforms, such as System 1\*, for further plant optimization.

### Applicability

The QDC package is designed to upgrade existing Woodward 500/301/43027 series control systems and can be used on a variety of turbine applications including, aeroderivative gas turbines, industrial gas turbines, steam turbines and hydro turbines.

### Benefits

- Plug and play technology for quick, low-risk installation
- Improved plant availability
- Reduced downtime related to parts obsolescence
- Better accessibility to unit data through Ethernet compatibility and open architecture
- Flexible system-design through use of distributed I/O expansion, allowing for a variety of applications
- Follows IEC 61131-3 programming standards for support of multiple programming environments

### Features

- Real-time operating system for real-time turbine control
- User-friendly human-machine interface (HMI) that includes:
  - Graphical displays with detailed information for preventative and predictive maintenance
  - Performance display and calculations for optimized maintenance scheduling
  - Descriptive displays of operating parameters
- Pentium® processor for exceptional processing power
- Fast, accurate on-board I/O modules
- Profibus and other field bus options for additional I/O expansion and functionality
- Direct interface to Woodward electrically actuated fuel valves
- On-board generator synchronizing and power management functions optionally available
- Other functionalities and options available



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## Base Package

- Woodward 43027/301, 301/501, 501/501 system upgrade, core fuel control and sequencer – single fuel
- Double sided retrofit plate, complete unit – pre-wired, assembled, tested
- Woodward AtlasPC™ with GE VersaMax™ expansion I/O
- Embedded Microsoft® Windows® operating system-based software tools including Control Assistant
- Choice of serial or Ethernet interface to DCS system
- Customer system manual

## Optional Upgrades

- Actuator and valve upgrades – liquid, gas, steam, and hydro
- Desktop or rackmount HMI packages
- Dual fuel, single/dual steam, water
- Xycom replacement

## Specifications

- Skid Mount Packaging
  - Class 1, Div 2 and Zone 2 HAZLOC Environment
  - CE compliant – Low Voltage Directive, Machinery Directive, Heavy Industrial EMC Directive
  - Operating temperature: -20 to 70 °C (55 °C with Profibus)
  - Storage temperature: -20 to 85 °C
  - Vibration: Lloyds RS Env 2 (0.7g, 15-150Hz)
  - Shock: Mil-Std-810C, M16.2 (30g, 11msec, 1/2 sine)
  - IP56 Front Panel with optional Display and Keypad (future)

Function/Features	Typical Configuration	Upgrade
Fuel Control	501/43027	QDC
Sequencer	301/501	
Relay Boxes	Unitized Soldered Sealed Relays	Removable, Field Repairable Plug Style
Operator Interface	Xycom Text Display	Graphical-Based HMI, Intellution Operating System
<b>Options</b>		
Fuel Control Valve – Gas	TM55P-3103 Gas Valve	GS-16 or EM35-3103
Fuel Control Valve – Liquid	TM55P-1907 Liquid Valve	LQ-25
Steam Injection Valve	TM-1000LP – Fisher Steam Valve	TM-1000LP – Fisher Steam Valve
Water Injection Valve	TM-40LP – 3151A	TM-40LP – 3151A
Start Skid	Stand Alone PLC Integrated	into QDC



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