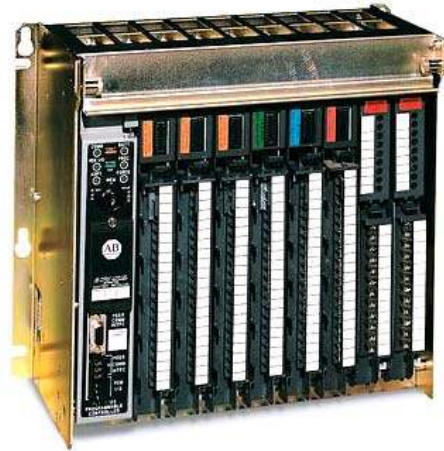




PLC-5 Upgrade

Gas Turbine / Compressor Controller Upgrade



AB PLC 5 Obsolescence

In 1985 Rockwell Automation introduced the PLC-5 programmable controller. Since then, over 450,000 PLC-5s containing over 10,000,000 I/O modules have been installed worldwide. Currently, Rockwell encourages users to consider migration solutions for the legacy PLC-5s. Already, the PLC-5 co-processor module has been classified obsolete.

Petrotech Keeps It Going

Rest assured Petrotech is committed to support its PLC-5 based installations throughout the world. Petrotech understands it is hard to justify replacing an aging system when it is operating problem-free. The Petrotech approach is to maximize the lifetime use of the installed PLC-5 systems with minimal cost and downtime while preparing the system for future upgrades.

The existing PLC-5 controller program including both the Petrotech Anti-Surge Control (ASC) and the Turbine Fuel Regulator (TFR) Control is ported into a current-technology PLC processor, then a dedicated link is established to the existing PLC-5 system. The Petrotech solution is provided

in two choices. Each solution is designed to retain the base system and replace minimal components. Petrotech will port the existing PLC-5 controller application(s) into a current technology ControlLogix PLC processor and establish a dedicated link to the existing system. This method is minimally invasive as it only affects the processor module. Much of the existing system is untouched and remains fully functional. For maximum compatibility with end-user new system guidelines, the Petrotech upgrade solution is compliant with international programming standards.

Petrotech PLC-5 Upgrade Advantages

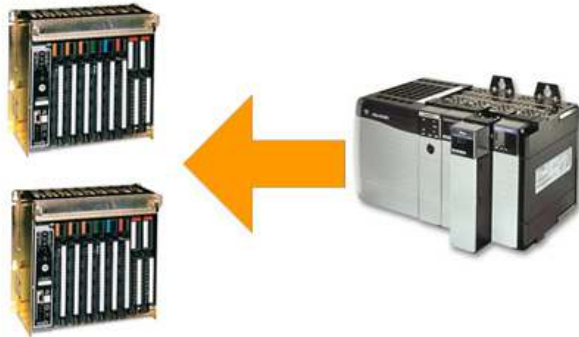
- Over 40 years of Petrotech anti-surge expertise
- 100% application(s) transfer
- Fully integrated functionality
- IEC-1131 standard programming
- Retain most of existing system hardware
- Easily increment additional capacity
- New CPU can form base of future system

The Petrotech approach is to maximize the lifetime use of the installed PLC-5 systems with minimal cost and downtime while preparing the system for future upgrades.

The System

To upgrade a PLC-5 and PLC-5/Flex I/O combo system, the Petrotech project team will convert the original assembler-based program to an IEC-1131 international standard compliant program. Using IEC-1131 standard programming languages reduces end-user operation and maintenance costs by providing a common methodology

PLC-5 Upgrade



PLC-5 System Upgrade

Replaces legacy processor and co-processor with ControlLogix processor. This solution provides a viable migration path for the system over time.

across multiple PLC systems. Depending on the application, Petrotech will install this program into either a ControlLogix or other current technology PLC processor.

The Petrotech Anti-Surge Control—included in the PLC-5 upgrade provides consistent and accurate compressor surge protection across a wide range of process gas conditions, resulting in optimum anti-surge protection and elimination of unnecessary recycling. Petrotech's advanced anti-surge protection algorithms automatically compensate for varying molecular weights, temperature, pressure, compressibility, and rotational speed. Both the ASC and TFR applications are based upon Petrotech's experience gained in providing thousands of compressor control systems spanning over 40 years.



PLC-5 and Flex I/O Combo Upgrade

Replaces legacy processor and co-processor with ControlLogix processor. This solution directly upgrades PLC-5 to current technology.

Contact your Petrotech representative for additional information.

Petrotech's products include integrated control systems for gas, hydro and steam turbines, generators, reciprocating/diesel engines, centrifugal and axial compressors, pumps and all associated ancillary systems.

Our turnkey services include engineering design and project management (software and hardware), instrumentation, control panel fabrication, site I&E services, commissioning, startup and all aftermarket and training services.

For more information about Petrotech's products and services, visit our website at www.petrotechinc.com.



Contact us at:

Petrotech – New Orleans
Corporate Headquarters
151 Brookhollow Esplanade
New Orleans, Louisiana 70123
USA

PHONE: +1(504) 620-6600
EMAIL: info@petrotechinc.com (all offices)

Petrotech - Houston
7240 Brittmoore Road
Suite 115
Houston, Texas 77041
USA

+1(281) 220-3060

Petrotech UK Ltd.
Western Way
Bury St. Edmunds
Suffolk, IP33 3SZ
UK

+44 (0) 1284 715 770

petrotechinc.com

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