

TRAINTOOLS™

SERIES 5™

*TrainTools Programs:
Integrated sets
of operator
interfaces and
engineering capabilities.*

***Integrated Engineering,
Configuration and
Operation***

***Powerful
Engineering Programs***

***Distributed
Operator Interface***



THE BEST OF BOTH WORLDS



COMPRESSOR
CONTROLS
CORPORATION

TrainTools™ is a modular set of programs that utilizes the latest Windows technologies, and provides the means to engineer, configure, and operate Series 5 control systems.

TrainTools™ programming package enables users, upon entering project information, to design, produce documentation, and automatically configure the control system including the operator interface.

TrainTools™ is the key to quick and affordable engineering of Series 5 control systems.

Integrated Engineering, Configuration and Operation

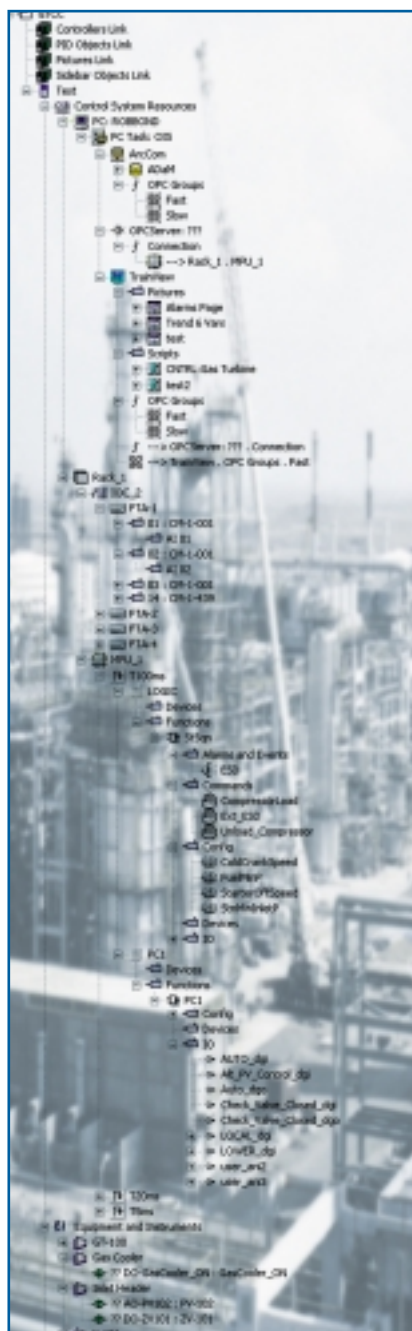
TrainTools software package features a high degree of integration between project engineering, system configuration, and operation. One of the main ideas behind TrainTools is to enable engineers to simultaneously design, produce documentation, and configure the control system without detailed knowledge of PLC programming. Engineers enter project information only once. TrainTools then uses this information to generate desired documentation (such as an I/O listing) and automatically creates and configures required elements of the control system, including the operator interface.

Once initial off-line configuration of the system is completed, TrainTools permits a wide range of changes in control system behavior on-line through parameter adjustment, without reprogramming the system.

The key element of the TrainTools programming package is an engineering database, which includes all system specifications, such as:

- instrumentation specifications;
- I/O lists;
- alarms, events, and corresponding messages; and
- control system hardware and software.

In addition, the engineering database includes the configuration of the



operator interface, and the data archival system. The database contains all relationships, or "connections" between data elements needed to fully define all engineering aspects of the project.

The top level of the user interface for viewing, modifying and building the database consists of the **Project Tree** structure. The information is arranged in a hierarchical manner, reflecting the configuration of the plant to be controlled, as well as the structure of the control system. Engineers specify associations between the field instrumentation (i.e., tag name of a transmitter), the control system I/O (i.e., terminals and control system I/O channels designation), and the variable name used by the control system software.

TrainTools software uses this information to automatically generate portions of the control program dealing with I/O assignment and processing, alarm messaging, and operator interface. Automation of such low-level programming details means a Series 5 Control System can be engineered quicker and at a lower cost than competing systems.

Powerful Engineering Programs

All TrainTools components operate in Windows 2000 environment and are fully integrated. The TrainTools package includes the following programs:

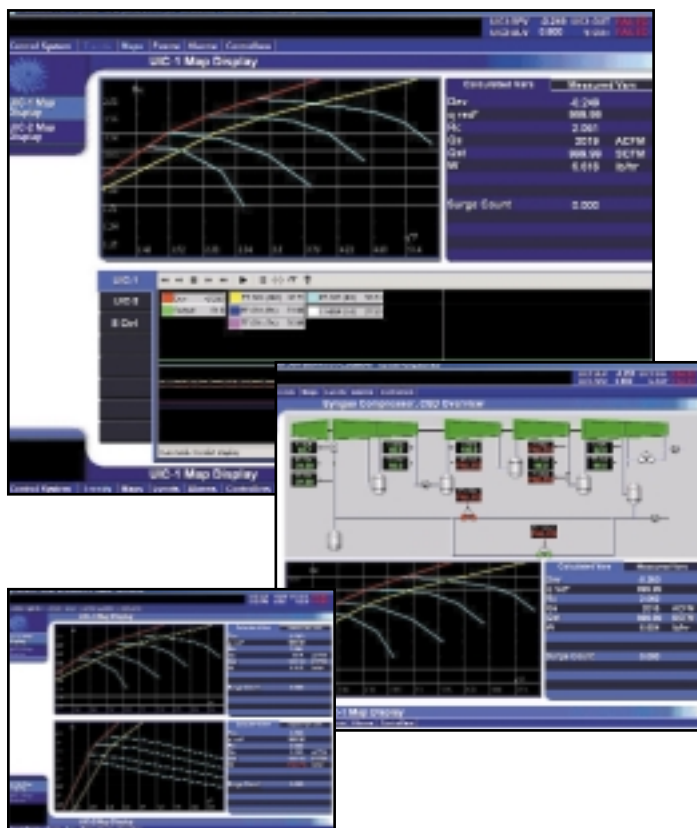
- **Project Builder**, a comprehensive tool for building a project database, using the Project Tree structure.

Project Builder's interface provides the means to establish the connection between a process tag, control system I/O designation, and logical name of the process variable used in the software. All of this can be done using standard Windows "drag&drop" techniques! Project Builder is much more than a documentation tool: it is tightly integrated with the IEC-61131 (formerly IEC-1131) programming environment and generates code for downloading to the controller.

- **Application Editor**, a full-service graphical editor for creating IEC-61131 compliant software. Integration of the Application Editor with the Project Builder saves valuable engineering time by eliminating redundant data entry.

The TrainTools programming package also includes the following troubleshooting, maintenance, and on-line configuration tools:

- Series 5 **Configurator** provides the means to change controller configuration parameters on-line. CCC's application software is designed to be highly flexible, allowing a wide range of changes on-line through adjustment of parameters,
- Fast **Recorder** can be used to view strip-chart type records of any data point in the controller with 50 msec resolution.



Distributed Operator Interface

CCC-developed operator interface software TrainView-II provides a state-of-the-art object-based graphical interface to all Series 5 controllers. The TrainView-II's full integration into the TrainTools environment simplifies configuration.



TrainView-II incorporates many features **designed specifically for turbomachinery applications**. Among these features:

- archiving of critical events with better than 100 msec resolution,
- dynamic compressor and turbine map displays with efficiency calculations, and
- other machine diagnostics information.

TrainView-II also has many of the features of the general-purpose HMI (Human-Machine Interface) programs, such as use of many pre-defined library objects, and built-in Visual Basic scripting.

Other components of the Distributed Operator Interface are:

- OPC Server allows OPC client programs (such as TrainView-II or other OPC-compliant clients) to communicate with the Series 5 controllers;
- Alarm Server provides alarm and event management and reporting facilities. All alarms and events are provided with the controller's time stamp, giving resolution of 10 msec for critical events and alarms;
- Archival Data Manager gathers and stores information obtained via OPC interface. Information can be displayed using trending facilities provided in TrainView-II, or exported in a number of standard formats;
- Several ActiveX objects including Dynamic Compressor Map display and Trender.

TrainTools programming package has client-server architecture and can be distributed across a network. Thus, OPC server and project database can reside on one machine (server), while TrainView-II can reside on another (client).

The impeller logo and TrainView, SafetyOn, and Recycle Trip are registered trademarks, and the Series 5 logo, Reliant, Vanguard, TrainTools, TrainWare, and SureLink are trademarks of Compressor Controls Corporation.

MORE INFORMATION

Please contact a CCC office near you for more information about our new TrainTools™ software and other state-of-the-art products from the world leader in turbomachinery control.



We will help you achieve maximum turbomachinery performance regardless of your equipment or process.

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