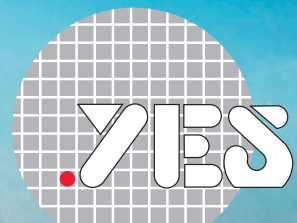


SECS/GEM Host Communications and Data Collection

Options for YES-PB Series Vacuum Ovens

INCREASE VISIBILITY OF YOUR PROCESS



Yield Engineering Systems, Inc.

SECS/GEM Host Communications

SEMI E5-0308 and SEMI E30-0307 compatible host communications and remote tool control are available as an option for YES-PB series vacuum ovens. The SECS/GEM host communications option offers the following capabilities:

- Establish communications
- Remote or local tool control
- Status variable reporting
- Equipment constant reporting and modification
- Date & time
- Loop Back Diagnostic
- Message spooling
- Status variable limit monitoring
- In-process materials status
- Alarm reporting
- Alarm report enable/disable
- Unlimited simultaneous trace reports
- Unlimited event report definition and linking
- Event report enable/disable
- Process program selection
- Process program upload/download
- Process program verification

The SECS/GEM option includes a user interface (UI) implemented as a Web page. The UI can be accessed from any computer connected to the host network using a standard Web browser. The UI offers the following capabilities:

- Process program editing and verification
- Process program download to the tool and upload from the tool
- Alarm history log showing both enabled and disabled tool alarms
- Collection Event history log showing both enabled and disabled collection events
- Material history log showing material MID or batch number, PPID, process start and process complete time and date, and process completion status

SECS/GEM Option Hardware

Host communications software is resident on a Linux PC server supplied by YES. Communications from the tool to the PC is via an RS-232 serial port; the PC must be installed near the tool.

Host communications are only compatible with the SEMI E37-0308 HSMS protocol over Ethernet, serial communications are not supported. Communications compatibility has been verified with the Asyst® SECSIM Pro+ simulation software package.

Data Collection Options

Yield Engineering Systems (YES) offers multiple software data collection options to increase visibility and control of your process. Data storage, trending, analysis, and reporting options are available in several configurations that can be customized to accommodate unique requirements.

YES data collection systems are designed to make detailed data collection easy. Real-time monitoring allows you to quickly react to process upsets, while access to historical data gives you the ability to study and improve your process strategy. Once a data collection system is started, data storage is automatic; no operator action is required. Simply point and click to retrieve data and generate reports.

Benefits

- Real Time Trend Displays
- Compressed Data Storage
- Trend Display of Historical Data
- Powerful Query Builder
- Quick & Easy Report Generation
- Export Process Data to Microsoft® Office Applications
- Detailed reporting for government compliance regulations
- Easy temperature profile creation

Data Collection Hardware

YES provides a Windows® server based PC with all required software installed and configured. For local data collection options that communicate with the tool using serial communications the PC must be installed close to the tool. For network data collection options the PC can be installed anywhere there is a network connection available.

Data Collection Software-Wonderware Historian (formerly IndustrialSQL)

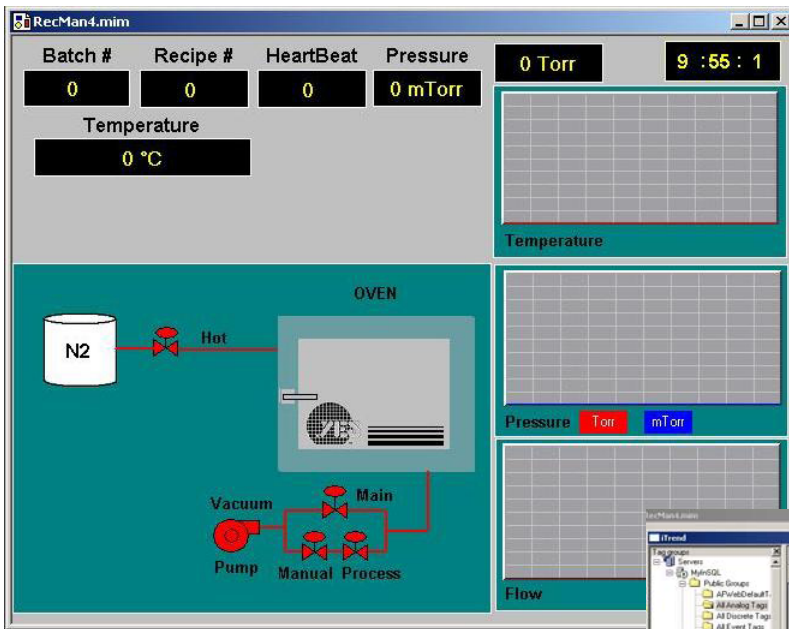
The data collection package supplied by YES is based on two commercial software applications. Wonderware Historian is a database and information server. Historian is a high speed data acquisition application that can gather operational data from multiple sources, add time and date stamps to the data, and store it in compressed form in a Microsoft® SQL relational database. One Historian application on a single PC can be configured to extract data from tool control PLCs on up to four YES tools.

The Historian and SQL applications must be running on the PC supplied by YES to retrieve and store process data.

At selected time intervals, Historian samples process data. If the value of any sample variable has changed since the previous sample, the new value is recorded. Record details include:

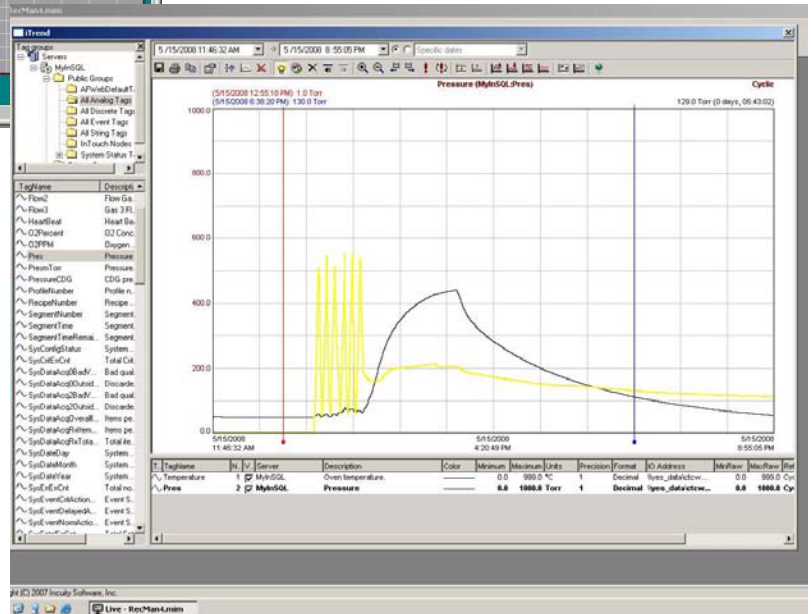
- Time and date stamp
- Numerical lot number
- Recipe number
- Chamber pressure
- Process temperature
- Gas flows (if optional mass flow controllers were installed)
- Process gas control valve state
- Vacuum control valve state

For data analysis, process data is retrieved by time/date or by lot number. The application displays all system data, system status, valve status, and three real time trends.



View Screen

Trend Screen



Data Collection Software- IncuityHDA Classic

IncuityHDA offers a collection of reporting and data analysis tools using information stored in Microsoft® SQL by Wonderware historian. The package is used to display tool status windows with real time trending. It can also provide historical trending, automatic report generation, and flexible data queries without using Structured Query language (SQL). Process data can also be selected and exported to Microsoft® Office applications such as Word® and Excel®. Microsoft® Office is installed on the YES PC.

The View screen shows current process parameter values, control valve states, and real time trends for some values.

Use Trend to look at data before generating reports to determine whether data looks unusual. If something upset the run, you will quickly catch the problem. Plus, this feature saves time wasted generating and publishing reports that have no anomalies.

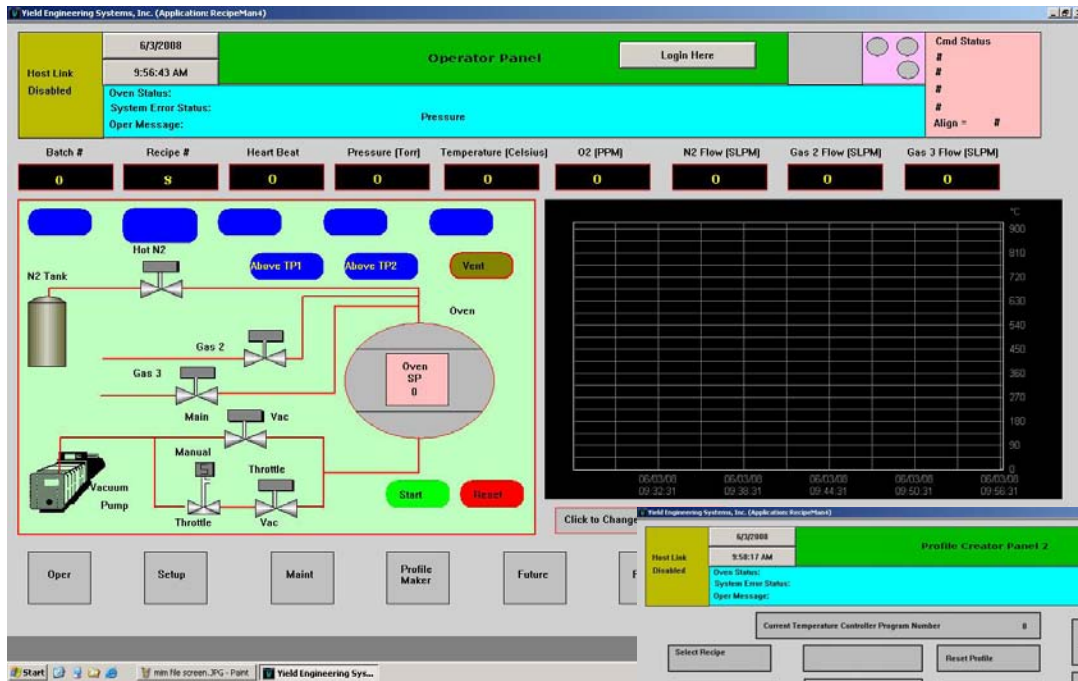
IncuityHDA can be installed and used on any computer that is connected to the YES PC by a network. A single concurrent user license is supplied with all data collection packages and is installed on the YES PC. IncuityHDA can be used on any computer where it is installed but only by one user at a time. Additional concurrent user licenses are available in some options that allow more than one networked computer to be used for data retrieval and analysis at the same time.

Remote Control & Temperature Profile Creation, Editing & Storage-Wonderware InTouch

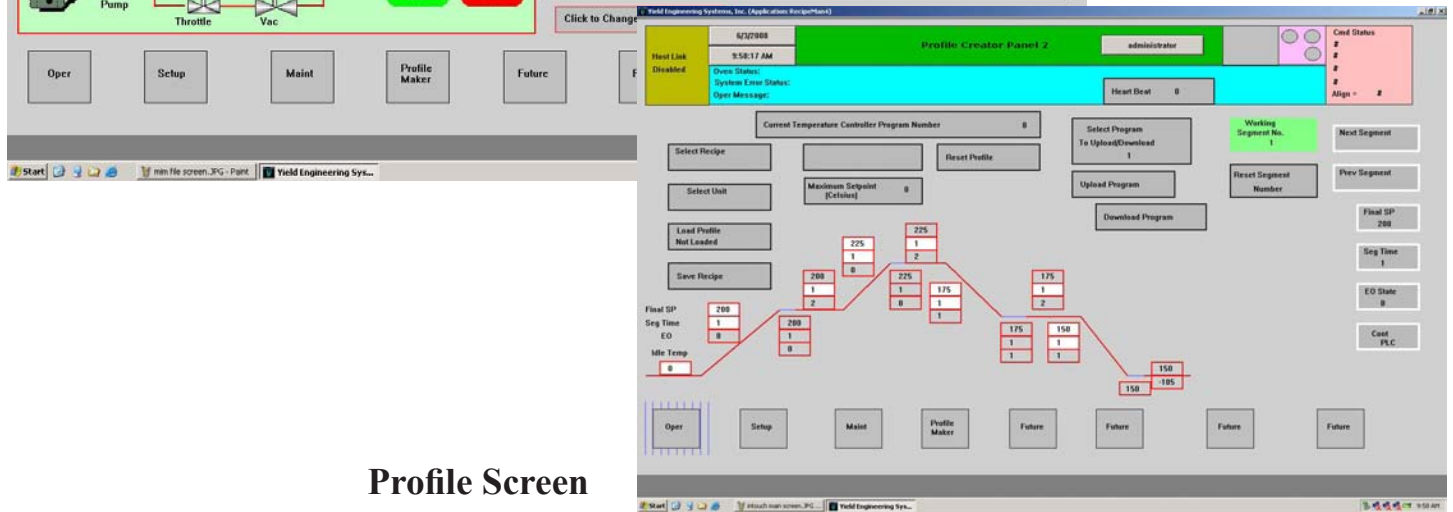
The Wonderware InTouch application may be added to a data collection package to provide the capability for remote monitoring of tool behavior, remote control of the tool, and remote creation, editing, and storage of oven temperature profiles.

The main screen shows current process parameter values, tool control valve states, and real time trends for selected process parameters. Tool control valves can be controlled by clicking on the valve schematic when the tool is in Maintenance mode. Process can be started on the panel when the tool is in Remote Control mode.

InTouch must be installed on the YES PC. Up to four additional applications can be installed on other networked computers.



Main Screen



Profile Screen

The subsequent pages explain the specific options that are available to you.

Single Tool Options:

Standard Data Collection Option, Single Tool	
RS-232 serial port for tool communications (PC must be within 100 feet of the tool)	PC, with Mouse, Keyboard, & Monitor
Communications Cable	Incuity HDA Classic, 1 single user
Microsoft Windows® Server	Microsoft® Office
Wonderware Historian	CTC Wonderware Communications Driver

Network Data Collection Option, Single Tool	
Network PLC card to add Ethernet communications capability to the tool control PLC TCP/IP address is 10.10.10.10, subnet mask is 255.255.0.0	PC, with Mouse, Keyboard, & Monitor TCP/IP address is 10.10.10.1, subnet mask is 255.255.0.0
Network Cable	Incuity HDA Classic, 5 concurrent users
Microsoft Windows® Server	Microsoft® Office
FSCAL 2000, 4 seats	CTC Wonderware Communications Driver
Wonderware Historian	

Standard Data Collection with Remote Control & Temperature Profile Editing Option, Single Tool	
RS-232 serial port for tool communications (PC must be within 100 feet of the tool)	PC, with Mouse, Keyboard, & Monitor
Communications Cable	Incuity HDA Classic, 1 concurrent user
Microsoft Windows® Server	Microsoft® Office
Wonderware Historian	CTC Wonderware Communications Driver
	Wonderware InTouch

Network Data Collection with Remote Control & Temperature Profile Editing Option, Single Tool	
Network PLC card to add Ethernet communications capability to the tool control PLC TCP/IP address is 10.10.10.10, subnet mask is 255.255.0.0	PC, with Mouse, Keyboard, & Monitor TCP/IP address is 10.10.10.1, subnet mask is 255.255.0.0
Network Cable	Incuity HDA Classic, 5 concurrent users
Network hub, 8 port	Microsoft® Office
Microsoft Windows® Server	CTC Wonderware Communications Driver
FSCAL 2000, 4 seats	Wonderware InTouch
Wonderware Historian	Wonderware InTouch terminal service license, 4 seats
	Wonderware inTouch, terminal service client, 4 seats

Multiple Tool Options:

Network Data Collection Option, 2-4 Tools	
Network PLC card to add Ethernet communications capability to the tool control PLC TCP/IP address is 10.10.10.10, subnet mask is 255.255.0.0	PC, with Mouse, Keyboard, & Monitor TCP/IP address is 10.10.10.1, subnet mask is 255.255.0.0
Network Cables	Wonderware Historian
Network Switch, 5 port	Incuity HDA Classic, 5 concurrent users
Microsoft Windows® Server	Microsoft® Office
FSCAL 2000, 4 seats	CTC Wonderware Communications Driver

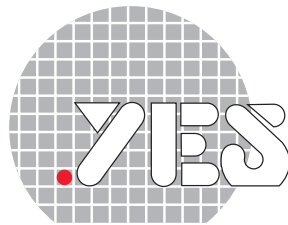
Network Data Collection with Remote Control & Temperature Profile Editing Option, 2-4 Tools	
Network PLC card to add Ethernet communications capability to the tool control PLC TCP/IP address is 10.10.10.10, subnet mask is 255.255.0.0	PC, with Mouse, Keyboard, & Monitor TCP/IP address is 10.10.10.1, subnet mask is 255.255.0.0
Network Cables	Incuity HDA Classic, 5 concurrent users
Network hub, 8 port	Microsoft® Office
Microsoft Windows® Server	CTC Wonderware Communications Driver
FSCAL 2000, 4 seats	Wonderware InTouch
Wonderware Historian	Wonderware InTouch terminal service license, 4 seats
	Wonderware inTouch, terminal service client, 4 seats

Conclusion

Choosing a software option tailored to meet your requirements depends on multiple factors. We can help you find a solution that is the right fit for your process. For over 25 years, Yield Engineering Systems has been designing systems to meet the needs of innovative engineers, lab managers, and fabrication houses.

Call +1 925 373 8353 (worldwide) or +1 888 YES 3637 (US toll free), or visit us online at

www.yieldengineering.com.



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