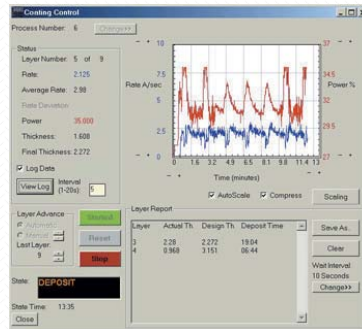




Control Systems



VPT's Control Systems are well known for their proven reliability in a multitude of custom vacuum equipment applications. System options cover a wide range of control complexity from a simple, manual operation to fully automatic, PC based packages.

VPT also designs and manufactures dedicated, self-contained control units for customer-specific applications such as pumping sequencers, regeneration controls, and planetary drive systems. The planetary drive systems are described in more detail in the [Substrate Fixture Rotation Systems](#) Brochure.

The standard VPT Control System is PLC (programmable logic controller) based and provides manual and semiautomatic operation. The PLC is the key component of the control system, interfacing with all system components and providing vital sequencing and interlocking capabilities. An optional PC control system utilizes the PLC platform and HMI operator interface package to provide customizable and easy-to-understand graphic screens on the computer for system control and intuitive process variable input.

Multiple process recipes can be developed, stored, and run as required by even the most demanding production requirements. Manual and automatic modes are included for initial process development and optimization. The PC also includes data logging capability as well as a historical database for logging system alarms and operator-initiated actions. Real-time trending of various system variables is also a feature of this software package.

RS View 32 HMI includes the following screens:

1. Vacuum Setup/Status
2. Process Setup/Status
3. Recipe Setup
4. Real Time Trend
5. Data Log Setup
6. Active Alarms
7. Alarm History

| Layer | State | State Time | Thickness Rate | Power |
|-------|---------|------------|----------------|--------------|
| 5 | DEPOSIT | 04:59 | 0.572 | 1.113 33.321 |
| 5 | DEPOSIT | 05:04 | 0.582 | 2.054 33.431 |
| 5 | DEPOSIT | 05:10 | 0.596 | 2.757 32.728 |
| 5 | DEPOSIT | 05:16 | 0.611 | 2.721 32.432 |
| 5 | DEPOSIT | 05:21 | 0.624 | 2.59 32.300 |
| 5 | DEPOSIT | 05:27 | 0.637 | 2.668 31.753 |
| 5 | DEPOSIT | 05:33 | 0.65 | 2.078 31.830 |
| 5 | DEPOSIT | 05:38 | 0.662 | 2.275 31.543 |
| 5 | DEPOSIT | 05:44 | 0.675 | 2.102 31.340 |
| 5 | DEPOSIT | 05:49 | 0.687 | 2.037 31.271 |
| 5 | DEPOSIT | 05:55 | 0.699 | 2.055 31.039 |
| 5 | DEPOSIT | 06:01 | 0.711 | 1.787 31.200 |
| 5 | DEPOSIT | 06:06 | 0.723 | 2.043 30.895 |
| 5 | DEPOSIT | 06:12 | 0.735 | 1.995 30.813 |
| 5 | DEPOSIT | 06:19 | 0.748 | 1.995 30.868 |
| 5 | DEPOSIT | 06:25 | 0.76 | 1.924 30.852 |
| 5 | DEPOSIT | 06:30 | 0.771 | 1.459 31.203 |
| 5 | DEPOSIT | 06:36 | 0.783 | 1.769 30.998 |
| 5 | DEPOSIT | 06:42 | 0.795 | 1.704 30.996 |
| 5 | DEPOSIT | 06:48 | 0.805 | 0.953 31.092 |
| 5 | DEPOSIT | 06:54 | 0.81 | 0.935 32.176 |

- The Vacuum Screen is used to view status (on/off, open/closed) of the vacuum valves and pumps and is used to operate the pumping system in a manual mode.
- The Process Screens are used to set up the process variables and monitor the status of the instrumentation, processes, and interlocks.
- The Recipe Screens are used to verify and/or modify the parameters to be loaded into the IC/5 crystal monitor.
- The Real Time Trend Screens consist of two trend screens. One screen shows the chamber pressure versus time and the other is selected by the operator to view the changes over time of any of up to 16 pre-defined process variables.
- The flexible Data Log Setup Screen is used to set up data logging in the manner specified by the operator.
- The Active Alarm Screen shows any alarms that have not been corrected and acknowledged.
- The Alarm History Screen shows all alarms in a historical manner.

Many more details available at www.vptec.com