

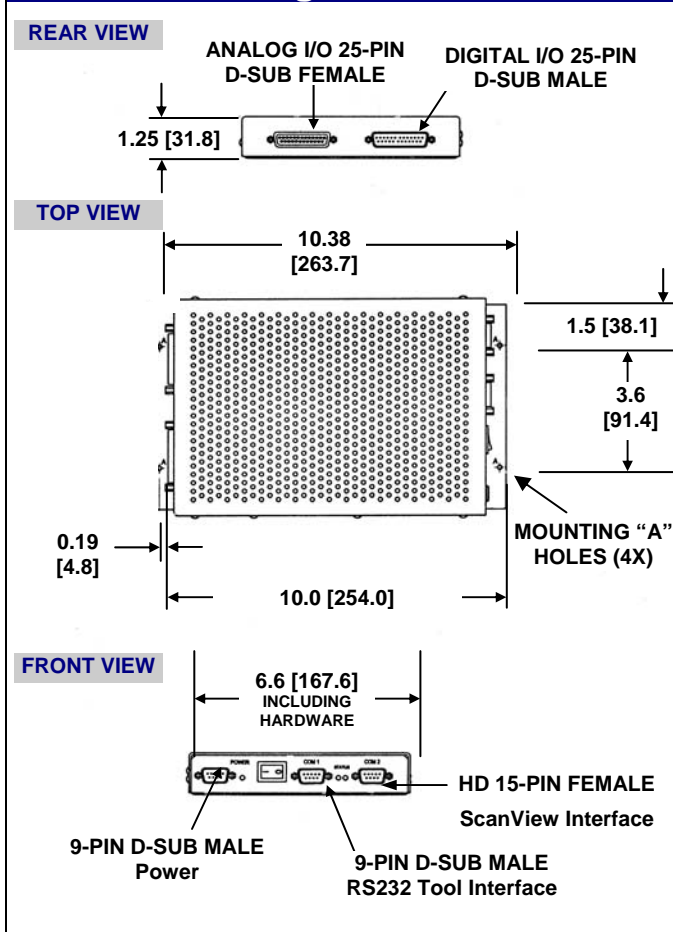


**SDC2006**

## Features and Benefits

- Compact design for OEM applications
- Robust endpoint determination through proprietary software
- Eliminates need for applications computer through fully integrated, embedded operation
- Can operate four synchronous manual monochromators or detectors
- Reduce processor overhead on application interface computer by running algorithms on SDC2006
- RoHS Compliant

## Outline Drawing



## Description

Recognizing the industry trend toward smart sensors, Verity Instruments offers a "smart detector" control module that adapts traditional analog endpoint sensors such as monochromators and filter detectors into a compact, powerful, stand-alone endpoint detection system with host interface capability. The SDC2006 offers this functionality through sophisticated embedded processors and software to provide data acquisition, instrument control, endpoint capability, and host interface without the requirement of an additional PC-based control computer.

The SDC2006 can support up to four synchronous manual monochromators, four detectors, or any combination thereof.

The SDC2006 is a drop in replacement for the SDC2004 and the SDC2006 is RoHS compliant. No change in mounting, connections, or applications software is needed. The SDC2006 is compatible with the same versions of applications software as the SDC2004.

## Operation

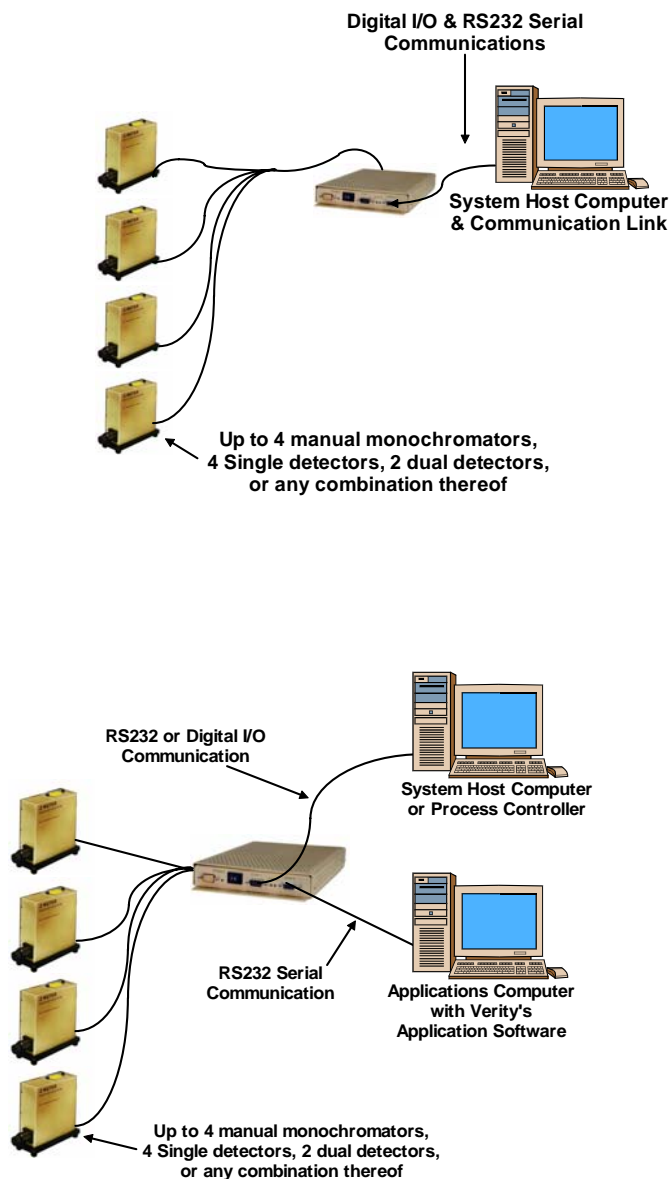
The SDC2006 provides superior data acquisition (16 bit), signal processing, sensor control (16-bit D/A and digital I/O), and endpoint detection. This controller executes Verity's proprietary endpoint detection software, as well as traditional threshold-based endpointing algorithms. Since the resident program is flash-based, the firmware is easily field upgradeable. An input DC-to-DC converter provides isolated analog power supplies ensuring excellent noise immunity.

The compact, modular design of the SDC2006 affords easy mounting on any process module, preferably

locating close to the analog sensor to minimize signal detector cable length. An RS232 ASCII protocol provides for host communications.

Verity's Windows-based software that runs on a laptop or host computer which provides a graphical user interface to all functions for data presentation, parameter modification and data file storage / management. Alternately, the SDC2006 can be fully integrated into a tool without a fulltime user interface, or data file storage thus eliminating the need for an additional application computer.

## System Schematic



### Fully Integrated Within a Tool

When fully integrated, the SDC2006 operates up to four synchronous manual monochromators or detectors without the need for a full time application computer or Verity-supplied application software. This cost-effective configuration does require the development of a tool-specific communication link. All endpoint control algorithms reside on the SDC2006, thus avoiding overburdening the system host computer.

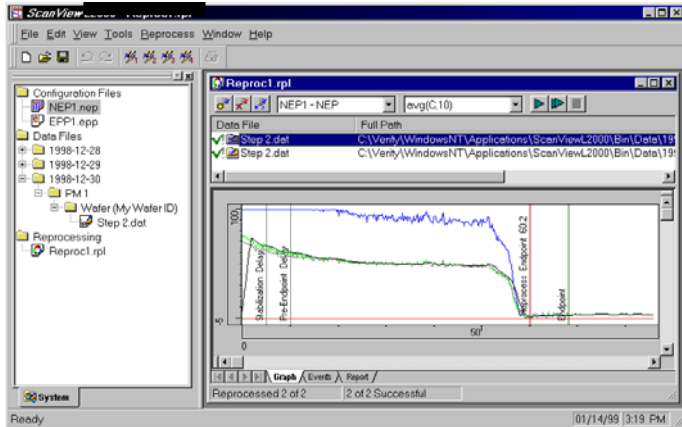
Note that the SDC2006 has no internal data storage capability. Verity recommends use of the "Partially Integrated" solution for data storage.

Alternatively, the applications software can run on the System Host PC in the "listen" mode. In this method trend data can be shown on the tool GUI while the SDC2006 is used for EPD processing. Endpoint trend data can also be stored on the system host computer.

### Partially Integrated Within a Tool

In partially integrated configurations, the SDC2006 operates up to four synchronous manual monochromators or detectors. An RS232 ASCII protocol is used to communicate start, stop, recipe select, and endpoint between the SDC2006 and the tool process controller. An application computer with Verity's ScanView IV application provides a user interface and run-time data storage functions.

# Software

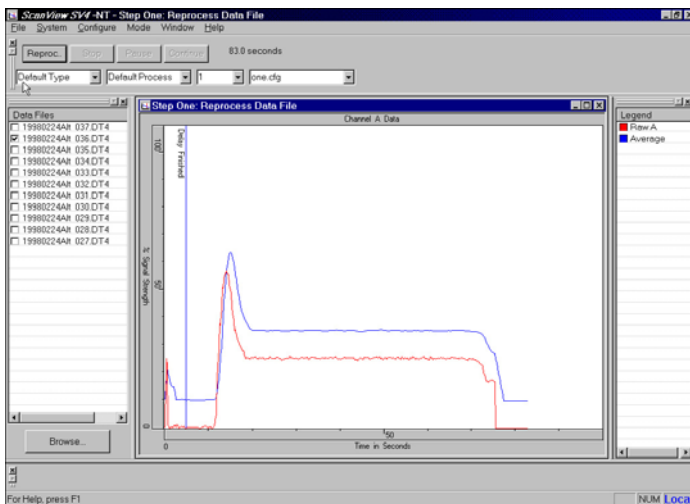


## ScanView IV-

ScanView IV is an intuitive, powerful program, permitting graphical display of acquired data, data storage, retrieval of data files and complete instrument control. Since the software is Windows™ -based, multiple instances of the application can perform asynchronous processing on multiple process modules. This means that ScanView IV can be used to support instruments that are running on different systems.

This software, when combined with the proper instrumentation, allows endpoint determination in a wide range of applications. ScanView IV uses a Windows-based GUI (graphical user interface) which allows the use of a pointing device, such as a mouse, to select the commands and options to perform optical emission spectroscopy (OES) analysis. The OES data received from ScanView IV is exportable to other analysis software applications.

Creation / editing of endpoint algorithms and process sequences is must be performed with the ScanView Software which then facilitates transfer of the sequences to the SDC2006.



| <b>Specifications</b>                          |   |
|--|---|
| <b>Model Number</b>                            | <b>SDC2006</b>  |
| <b>Computing Specifications</b>                |   |
| <b>Processor Type</b>                          | SC520 CPU   |
| <b>General</b>                                 |   |
| <b>Interfaces With</b>                         | 4 Manual Monochromators<br>– OR –<br>4 Single Detectors/2 Dual Detectors<br>– OR –<br>Any combination thereof   |
| <b>Synchronous or Asynchronous Operation</b>   | All instruments must be operated synchronously  |
| <b>Applications Software</b>                   |   |
| <b>Type</b>                                    | ScanView IV   |
| <b>Platform (required to use)</b>              | Windows 2000 w/SP4,   |
| <b>Communications</b>                          | RS232   |
| <b>Archived Data</b>                           | When configured as shown in the "Partially Integrated Within a Tool" configuration, the following data can be saved: signal data, recipe information, and reprocess information |
| <b>Data File Viewing</b>                       | In graphical and numerical format   |
| <b>Editing</b>                                 | Sequence editor included for modifying parameters   |
| <b>Embedded Endpoint Algorithms</b>            |   |
| <b>Endpoint Algorithms</b>                     | Neural Network pattern recognition, Threshold   |
| <b>Interfacing</b>                             |   |
| <b>Instrument Input Signal</b>                 | Four Channel Analog (16-bit A/D)  |
| <b>Instrument AGC (Automatic Gain Control)</b> | Four Channel Analog (16-bit D/A)  |
| <b>Interfacing to Tool</b>                     | RS232 ASCII   |
| <b>Enclosure</b>                               |   |
| <b>Dimensions [inches (mm)]</b>                | 10.38 (263.7) Length x 6.6 (167.6) Width x 1.25 (31.8) Height   |
| <b>Power</b>                                   |   |
| <b>Power Input</b>                             | 22-28 VDC @ 25 Watts  |
| <b>Safety</b>                                  |   |
| <b>Compliance</b>                              | RoHS, CE and Semi S2-93   |

## Recommended Applications Computer Requirements

|                   |  |
|-------------------|--|
| <b>Platform</b>   | Windows 2000 w/ SP4                                |
| <b>Processor</b>  | Pentium 4 1.6 GHz or current PC Market entry point |
| <b>Memory</b>     | 512 MB RAM or current PC Market entry point        |
| <b>Hard Drive</b> | 40GB or current PC Market entry point              |
| <b>Graphics</b>   | SVGA (800x600)                                     |

## Ordering Information

|                |  |
|----------------|--|
| <b>SDC2006</b> | Consult factory with your application. |
|----------------|--|