

**AVTRON MODEL K899
PERFORMANCE VIEW™ - LITE
Hardware Manual**

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Cleveland, Ohio**

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SECTION I

INTRODUCTION

1.1 OVERVIEW

The Avtron Model K899 Performance View™ Graphic Trending and Event History Recorder is a software controlled device which provides complete monitoring and troubleshooting in support of processes such as machine control systems, PLCs, and drive systems, including the Avtron ADDvantage-32 Digital Drive. Diagnostic capabilities provide early notification and prioritization of system irregularities, allowing for the application of preventive maintenance, rapid troubleshooting, and reduced system downtime.

System data is acquired and communicated over an Ethernet network, allowing for real-time data display, or recall (historical) display of stored data.

CAUTION

Do NOT attempt to replace the operating system. Contact Avtron's Service Department at 216-642-1230, Ext. 1255.

CAUTION

Keep all manuals and software for all components of this system in a safe location. Avtron is not responsible for documentation/software of third party components of this system.

Performance View™ is a trademark of Avtron Mfg., Inc.

Modbus® is a registered trademark of Modicon, Inc.

W A R N I N G

The operating software installed in the Avtron Performance View™ is critical to the operation of the system. Installation or operation of any other software programs, especially games or screen savers, is **prohibited** and voids any and all warranties. Installation or operation of other software programs may interfere with the installed software, and damage to the components or operation outside operational/safety rated limits may occur, resulting in injury or death to personnel, and/or damage to attached equipment.

W A R N I N G

Connection of external network devices to the system is strictly prohibited without the consent of Avtron Mfg. Inc. Doing so will void any and all warranties. Loss of network integrity/privacy may result. Consult Avtron for proper design techniques that would not jeopardize the network architecture integrity.

W A R N I N G

This system is a realtime data collection device. Do not attempt to change the system clock or Time zone while the collection software is running. Close the Performance View™ viewer first; then shut down the Collector using the Stop_Collector icon. It is now safe to change the time. Reboot the system when done.

W A R N I N G

If using the optional NEMA Operator's Station, be sure to mount the enclosure as specified before use.

SECTION II

SYSTEM DESCRIPTION

2.1 COLLECTOR/VIEWER

Data acquisition and user interface is managed by the Performance View™ Lite Collector/Viewer. The primary responsibilities of the Collector/Viewer station is to collect and store data from the connected devices and provide the user interface.

2.1.1 PC

The Viewer PC incorporates a Windows® 2000 Professional Operating System and must contain at minimum the following hardware:

- 2.26 GHz CPU, 533 MHz FSB, 512 L2 Cache
- 256 MB RDRam
- 20GB, 7200 RPM IDE hard drive
- 3.25” floppy disk drive
- 56 KB Internal Phone Modem
- 10/100T Network Interface Card
- (Qty. 5) PCI expansion slots
- 10/100/1000T Embedded Network Interface Card
- 19” Color CRT Monitor
- Windows Keyboard
- Standard Mouse
- 19” rack mount form factor, 2U height, with rails for server rack (for rack mount configuration only)

2.1.2 UPS SYSTEM

The Uninterruptible Power Supply (UPS) is a device that sits between a power supply (e.g. a wall outlet) and a device (e.g. a computer) to prevent undesired characteristics of the power supply (outages, sags, surges, bad harmonics, etc.) from the supply from adversely affecting the performance of the device. The UPS system used for this system should have 700VA minimum capacity and support serial connection to the host computer.

The UPS system is also used to intelligently shut down the Collector/Viewer in such a way as not to corrupt any of the database files.

DO NOT attempt to operate the Collector/Viewer without a properly configured UPS.



2.1.3 PRINTER

HP Inkjet 5850 desktop color printer, or equivalent, used to print real-time or historical representation of data and graphical trending screens.

2.1.4 ADDITIONAL VIEWING STATIONS

Multiple viewing stations may be added to the network. Each viewing station must be composed of a PC, monitor, keyboard and mouse.

2.1.4.1 Desktop Station

An additional desktop viewing station may be added to the Performance View™ Lite system as an option. The additional viewing station requires an additional desktop PC (the same minimum requirements listed in section 2.1.1 above), 19" monitor, keyboard, and mouse.

2.1.4.2 Rack Mount Station

An additional desktop viewing station may be added to the Performance View™ Lite system as an option. The additional viewing station requires an additional rack mount PC (the same minimum requirements listed in section 2.1.1 above), 19" monitor, keyboard, and mouse.

2.1.4.3 NEMA Operator Station

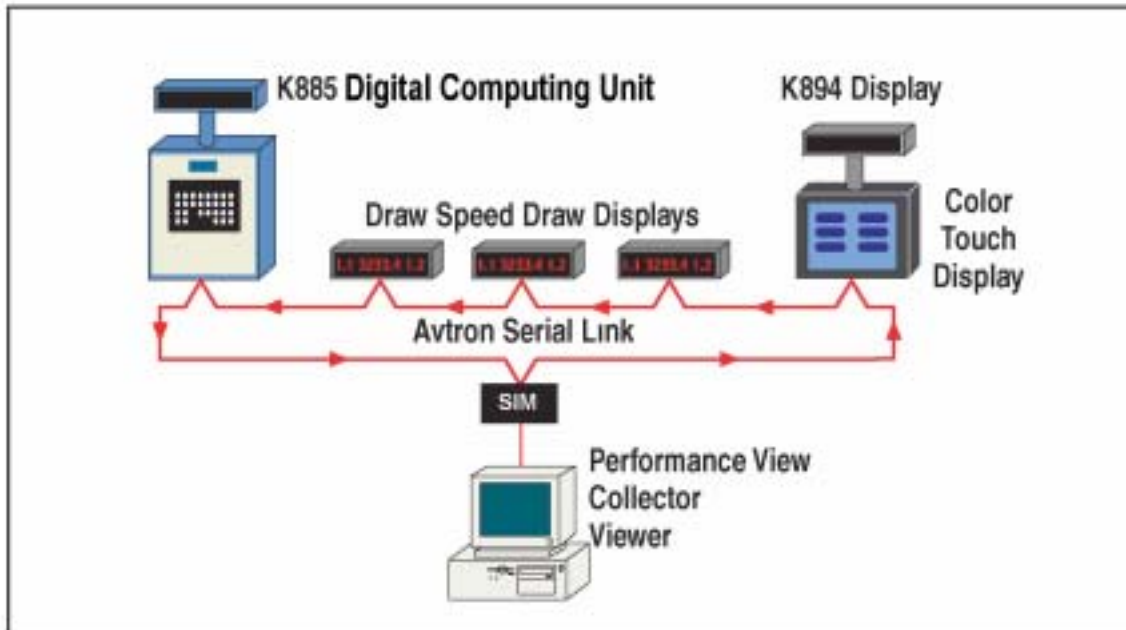
The add-on NEMA operator station can extend a viewing station out to the factory floor in place of the 19" CRT monitor and keyboard. This station utilizes a NEMA 4x, 18.1", TFT, flat panel monitor, NEMA 4x panel mount keyboard with hula point device, and choice of NEMA 12 or 4x enclosure. The viewing station can extend out on the factory floor from the viewing station PC (located within a control room) from 500 to 1000ft using a KVM extender. The NEMA enclosure can be manufactured for wall or pedestal mount configurations depending on application.

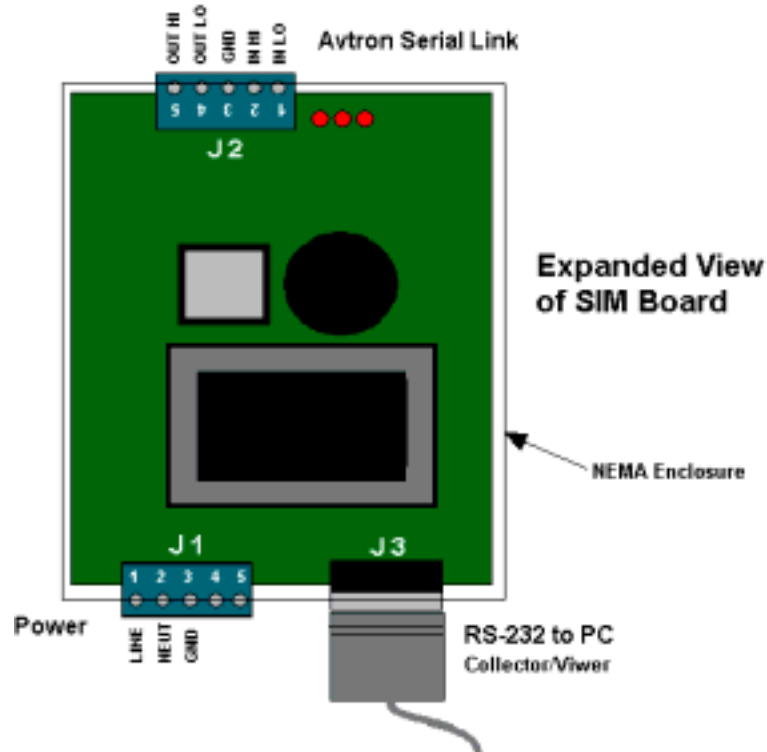


2.2 K885 SERIAL INTERFACE MODULE (SIM)

The K885 Serial Interface Module (SIM) is an Avtron manufactured device that allows devices supporting RS-232 to “tap” into the Avtron K885 Serial Link used by the K885 systems. The SIM provides an interface for the Collector to capture real-time data off of the SISL from the K885 DCU.

The K885 SIM is connected to the Collector/Viewer PC via a RS-232 cable to the COM port of the PC (interface to K885 Serial Link is shown below).





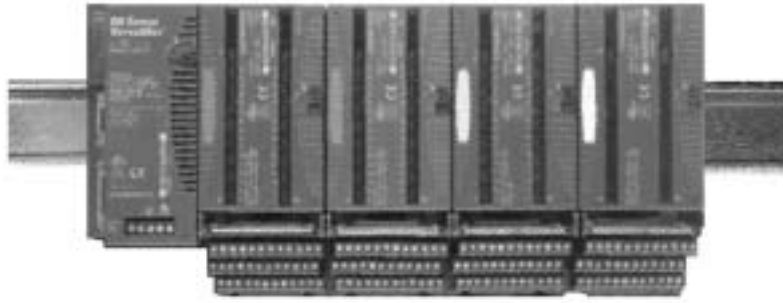
Data acquisition is achieved using the Avtron K885 OPC Server; refer to the “Avtron Model K899 Performance View™ User’s Manual” for additional information.

2.3 ETHERNET I/O SUBSYSTEM

An optional Ethernet remote I/O system may also be added to the Performance View™ System. This interface can be made using a Network Interface Unit (NIU), supporting EGD protocol only, which may support up to eight of the following available I/O modules per NIU:

- 16 points, 120VAC discrete input isolated
- 16 points, 120VAC discrete (2 groups of 8 points)
- 16 points, 24VDC discrete (2 groups of 8 points)
- 8 channel 16-bit analog input (voltage/current)
- 8 channel 12-bit analog input (voltage/current)
- 8 channel 15-bit analog differential voltage input
- 8 channel 15-bit analog differential current input
- 15 channel, 15-bit analog voltage input
- 15 channel, 15-bit analog current input

All I/O modules are DIN rail mountable include the NIU interface module.



Additional information on the optional Ethernet I/O system may be found in the “Avtron Supported GE Fanuc Automation Programmable Control Products: VersaMax® Modules, Power Supplies, and Carriers” supplement to this manual.

SECTION III

PREPARATION FOR USE

3.1 ENVIRONMENTAL/POWER REQUIREMENTS

Before using any of the components for this system, ensure the following environmental and power requirements are within the recommended ranges.

3.1.1 RACK MOUNT/DESKTOP EQUIPMENT

The listed environmental conditions must be kept within the following limits for all components with exception to the optional NEMA Operator's Station and the optional Ethernet I/O system.

- Operating Temperature: 10° C to 35° C (50° F to 95° F)
- Storage Temperature: -40° C to 65° C (-40° F to 149° F)
- Operating Relative Humidity: 8% to 80% non-condensing
- Storage Relative Humidity: 5% to 95% non-condensing
- Operating Vibration: 0.25G at 3Hz to 200Hz for 15 minutes
- Storage Vibration: 0.5G at 3Hz to 200Hz for 15 minutes
- Operating Shock: 6 shock pulses of 50G for up to 2ms
- Storage Shock: 6 shock pulses of 92G for up to 2ms
- Operating Altitude: -16m to 3,048m (-50 ft to 10,000 ft)
- Storage Altitude: -16m to 10,600m (-50 ft to 35,000 ft)
- Operating Air Quality: Dust-free, office-grade air required for ventilation

3.1.2 NEMA OPERATOR'S STATION

The environmental conditions of the NEMA enclosure must be within the following range:

- Operating Temperature: 0° C to 40° C (32° F to 104° F)
0° C to 55° C (32° F to 131° F) with optional cooling unit installed on enclosure
- Storage Temperature: -20° C to 50° C (-4° F to 122° F)
- Operating Relative Humidity: 20% to 80% non-condensing
- Storage Relative Humidity: 20% to 80% non-condensing
- Operating Vibration: 1.0G at 5Hz to 2000Hz
- Storage Vibration: 2.5G at 5Hz to 2000Hz
- Operating Shock: 15G for up to 11ms
- Storage Shock: 30G for up to 11ms
- Operating Altitude: 0m to 3,048m (0 ft to 10,000 ft)
- Storage Altitude: 0m to 12,192m (0 ft to 40,000 ft)

The power requirement must be within the following range:

- AC Power: 100 VAC to 240 VAC, 1.0 A, 50/60 Hz

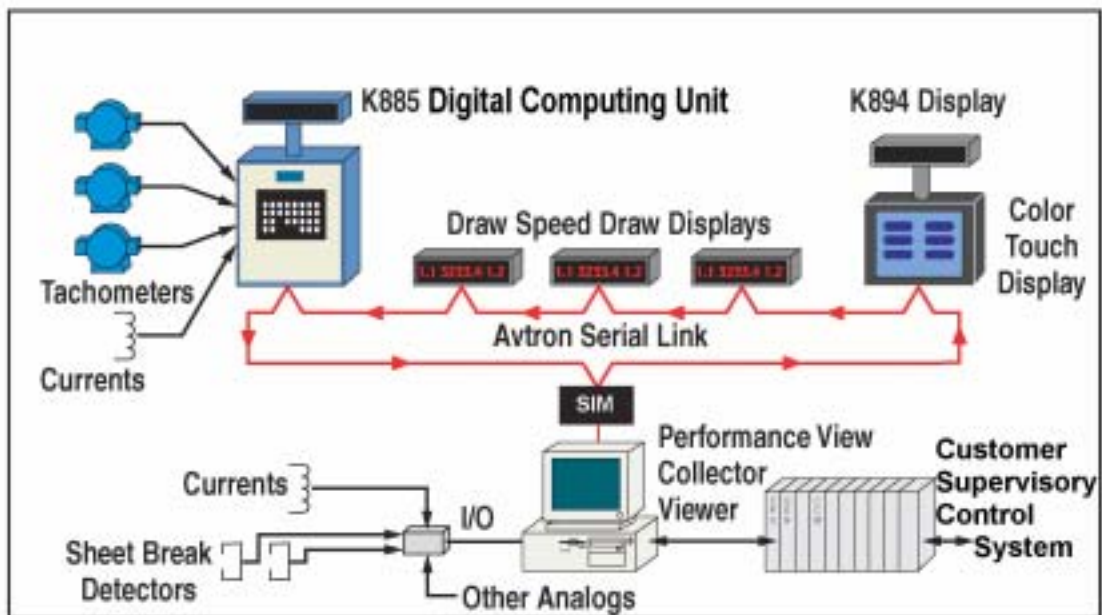
3.1.3 ETHERNET I/O SYSTEM

Refer to the “Avtron Manufacturing Supported GE Fanuc Automation Programmable Control Products VersaMax® Modules, Power Supplies, and Carriers” supplement to this manual for environmental and power specifications.

SECTION IV

INSTALLATION

Installation of the Performance View™ Lite System should follow the typical layout of the example diagram shown below:



Typical Performance View – Lite System Layout

Refer to the “Avtron Model K899 Performance View Graphic Trending and Event History Recorder User’s Manual” for information on software installation.

NOTE

Recommend placing the SIM first in line on the K885 Serial Link to minimize the chance of losing data to the Performance View System.

Loss of 120VAC power to the SIM or PC, or removal of the serial communications connection (K885 Serial Link or RS 232) will break the K885 Serial Link resulting in loss of serial communication to other devices downstream on the K885 Serial Link.

4.1 DESKTOP

The hardware installation of the Performance View™ Lite desktop configuration can be performed as shown in included drawings (refer to wiring drawings included in drawing packet for details).

4.2 RACK MOUNT

The hardware installation of the Performance View™ Lite rack mount configuration can be performed as shown in included drawings (refer to wiring drawings included in drawing packet for details).

4.3 NEMA OPERATOR'S STATION

To provide a user interface to the Performance View™ Lite system on the factory floor the NEMA Operator's Station option may be used to take the place of the monitor, keyboard, and mouse components of the desktop configuration. The installation of the NEMA Operator's Station can be completed as shown in included drawings (refer to wiring drawings included in drawing packet for details).

SECTION V

TROUBLESHOOTING

For questions or problems regarding the Avtron K885 Serial Link, refer to the “AVTRON MODEL K885 DIGITAL SPEED & DRAW SYSTEM” manual.

For all other questions or problems, refer to the Frequently Asked Questions (FAQ) under the Performance View link on the Avtron website (www.avtron.com) or call Avtron support.

SECTION VI

SUPPORTED COMMUNICATION PROTOCOLS

The following protocols are supported for logging data from optional customer-supplied 3rd party devices and for communicating data to optional customer supplied 3rd party devices:

- **Modbus TCP/IP** – Ethernet Modbus TCP/IP protocol utilizes the Ethernet RJ-45 network interface port on the Collector/Viewer PC.
- **Ethernet Global Data (EGD)** – EGD protocol utilizes the Ethernet RJ-45 network interface port on the Collector/Viewer PC.
- **Ethernet/IP Explicit Messaging** – Ethernet IP protocol utilizes the Ethernet RJ-45 network interface port on the Collector/Viewer PC.
- **Rockwell Automation PLC-5 (CSP)** – Ethernet CSP protocol utilizes the Ethernet RJ-45 network interface port on the Collector/Viewer PC.
- **Rockwell Automation SLC/05 (CSP)** – Ethernet CSP protocol utilizes the Ethernet RJ-45 network interface port on the Collector/Viewer PC.
- **GE Fanuc CCM** – The CCM protocol utilizes the RS-232 serial COM port on the Collector/Viewer PC.
- **GE Fanuc SNP** – The SNP protocol utilizes the RS-232 serial COM port on the Collector/Viewer PC.
- **GE Fanuc 90-30/90-70 Ethernet** – 90-30/90-70 Ethernet protocol utilizes the Ethernet RJ-45 network interface port on the Collector/Viewer PC.
- **Modicon Modbus Serial** – Modicon Modbus Serial protocol utilizes the RS-232 serial COM port on the Collector/Viewer PC.
- **Modicon Modbus Plus (MB+)** – Modicon Modbus Plus protocol utilizes the port of a SA85 interface card installed in an auxiliary PCI slot in the Collector/Viewer PC.
- **OPC Server Interface** – Consult Avtron for available options.

Consult Avtron for availability of any other custom protocols.