



GE Fanuc Automation

Industrial Computers

SV-WC15 Industrial Computer

Hardware User's Manual

SV-WC15

October 2003

Warnings, Cautions, and Notes as Used in this Publication

Warning

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

Caution

Caution notices are used where equipment might be damaged if care is not taken.

Note

Notes merely call attention to information that is especially significant to understanding and operating the equipment.

This document is based on information available at the time of its publication. While efforts have been made to be accurate, the information contained herein does not purport to cover all details or variations in hardware or software, nor to provide for every possible contingency in connection with installation, operation, or maintenance. Features may be described herein which are not present in all hardware and software systems. GE Fanuc Automation assumes no obligation of notice to holders of this document with respect to changes subsequently made.

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Field Control	Motion Mate	Series Five	VuMaster
GENet	ProLoop	Series One	Workmaster

Content of This Manual

This manual describes the features and operation of the following Model SV-WC15 industrial computer product:

15.0" Industrial computer with Windows 2000, NT, XP

Related Publications

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Chapter 1

Model SV-WC15 Industrial Computer Features

The Model SV-WC15 industrial computer is a high performance workstation designed primarily for use in a Hazardous Location and Harsh Environment running on Windows 2000®, NT®, or XP® operating systems.

Each member of the SV-WC15 industrial computer family is a fully self contained PC-compatible computer with a built-in flat screen display and near field imaging touch screen. The unit is housed in a rugged metal case to protect the system against dust, water, and damage.

Model SV-WC15 industrial computers are available with an auto ranging main power input unit for 90 to 264 VAC operation.

The unit is supplied completely assembled and requires only mounting and connecting.



Feature Summary

When you purchase a Model SV-WC15, you receive:

- Industrial computer with the operating system software installed.
- Installation hardware
- Microsoft Windows documentation, software distribution, Certificate of Authenticity and license agreement

Standard Features

Feature	Description
Microsoft Windows 2000	Windows NT and Windows XP are optional
CPU	Intel Celeron 566 MHz (minimum)
Cache	128K L2
Two PCMCIA Slots	16 or 32 bit PC Cards
Hard disk	10GB (minimum)
Disk On Chip	Optional
RAM	128MB minimum installed by factory. Maximum upgrade: 512MB
Display	15.0" Color Active Matrix TFT –XGA 1024 x 768 resolution
Touch Screen	Near Field Imaging
Parallel port	One bottom access (LPT1)
Serial ports	Two bottom access available
USB ports	Two USB, bottom access
Communications	10/100 Ethernet (RJ-45) (bottom access) - standard 10BaseT2 Ethernet (Coaxial) (bottom access) -optional Wireless Ethernet – optional Fiber Ethernet (bottom access) - optional
Keyboard port	PS/2, bottom access; MIL-STD connector (external access)
Mouse port	PS/2, bottom access; MIL-STD connector (external access)
PC/104 connector	Approved Cards installed upon customer request

Optional Features

The following features are optional on all models in the Model SV-WC15 range. Contact your GE Fanuc sales representative for details.

- Additional DRAM (DIMMs) (upgrade units only)
- Higher speed CPU (upgrade units only)
- 10BaseT2 Coaxial Ethernet
- Wireless Ethernet
- Disk on Chip
- RS 422/485
- 10/100 Base F Fiber Ethernet
- RS232 Terminal block mounting

Status LEDs

Front panel mounted LEDs indicate Power, Network, Hard Disk Drive (HDD) status. There are also two User LEDs that can be programmed according to the customer's needs. User1 is tied to ICH2_GPIO20 to indicate a temperature or voltage error in the system. User2 is controlled through I/O address A80 bit 2.

Bottom Access Panel

The SV-WC15 is equipped with a bottom access panel, which provides access to two serial ports, printer port, PS/2 keyboard, PS/2 mouse, two USB ports, RJ45 connector, Coaxial Ethernet connector (optional), and Fiber Ethernet connectors (optional). All cabling will access the bottom panel through a housing referred to as the 'Doghouse'. The cables must go through glands to enter the Doghouse.

Standard I/O

The Model SV-WC15 industrial computer provides the following I/O interface channels:

- Four RS-232 serial ports. The user may request for the optional 422/485 port in place of RS232 for COM1 and Com2. COM1 and COM2 are accessible from the bottom. The COM4 serial port is connected internally to the touch screen and is not available to the user. COM3 is connected internally to the Environmental Control Board and is not available to the user.
- One enhanced parallel port. LPT1 is located on the bottom access panel.
- Two USB 1.0 Ports are accessible through the bottom access panel.

If the end application requires serial or parallel interfaces in addition to those provided by the standard system, these can be provided by the addition of specific PC/104 cards. A wide selection is available from third party sources to provide user flexibility.

Network Interface

The Model SV-WC15 includes an autosensing 10/100 Ethernet adapter that provides a RJ-45 connector for unshielded twisted pair cable. The user may request for the optional 10BaseT2, Wireless Ethernet, or Fiber Ethernet to be installed.

Chapter 2

Hardware Installation

This chapter describes the procedures for the safe location and securing of the Model SV-WC15 industrial computer. The Model SV-WC15 industrial computers have been designed to ensure simple installation of the system.

Installation Guidelines

- This unit is designed to operate in an outdoor environment.
- The computer is furnished with a yoke style-mounting bracket. The bracket can be rotated for optimum viewing by the operator.
- The yoke can be attached to any solid structure capable of supporting 48 lbs under shock and vibration conditions (see data sheet on shock and vibration specifications).
- The computer also has a handle option; two handles can be mount to the trunions in place of the yoke to increase portability.
- The computer also has a pole mounting option; the pedestal option is mounted to the bottom of the yoke. It is designed to fit over a 1.93 in O.D. pole. The pedestal has two clearance holes for ¼-20 threaded bolt. The pedestal can be used as a template to drill and tap the existing pole for ¼-20 threads.
- To insure proper operation take care not to install unit in tight confined areas, during mid day operations when the effects of solar heating are at peak radiance, surrounding walls and surfaces can reflect additional solar energy and cause the unit to over heat and shut down until temperatures fall back to normal operating conditions.
- The unit must have a minimum clearance of six inches per side and 26 inches clearance behind the unit for rotating into operating position.
- The unit is equipped with pass through glands for cable connections. These glands are watertight and must be tighten to two complete turns after hand tightening to keep water out.
- See next page for illustrations for dimensions.

Warnings for Class 1 Division 2 Approval

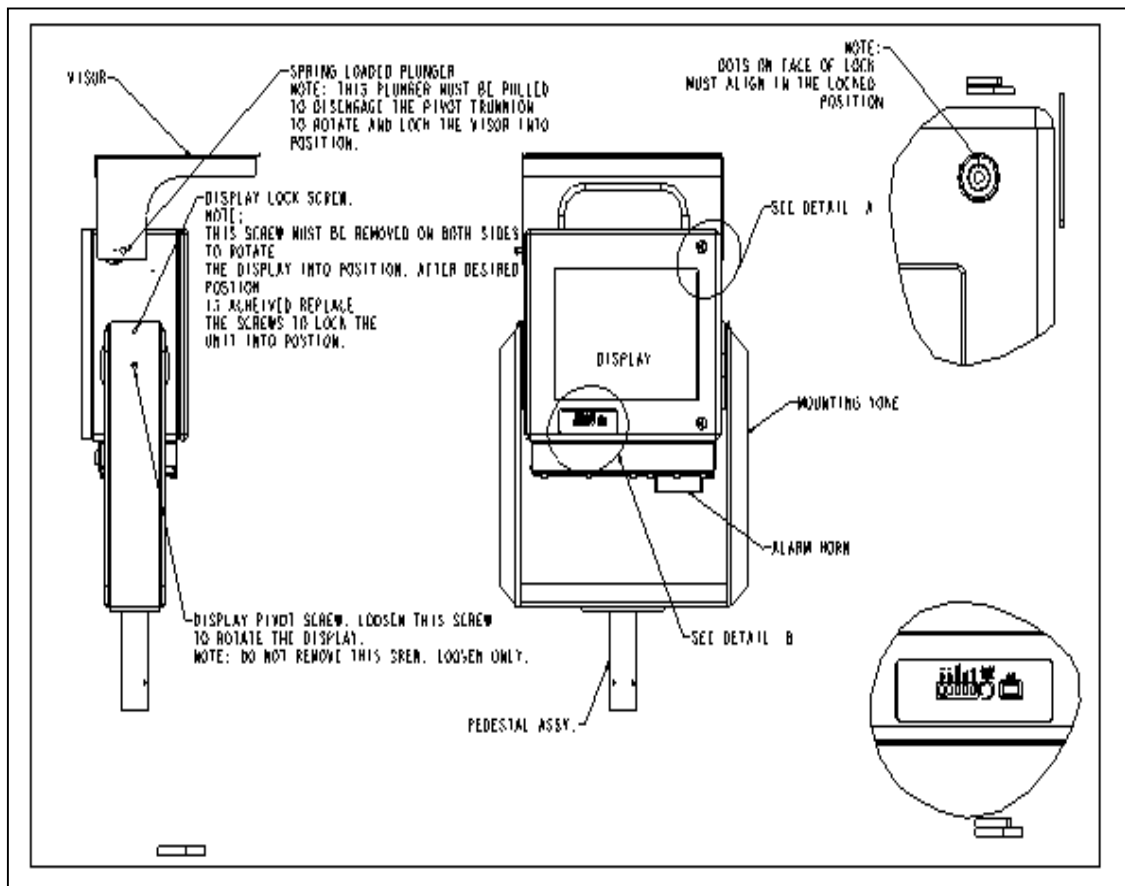
- Input and output wiring methods must be in accordance with Class I, Division 2 wiring methods and in accordance with the authority having jurisdiction.
- This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D or non-hazardous locations only.
- WARNING - Explosion Hazard - Substitution of components may impair suitability for Class I, Division 2.
- WARNING - Explosion Hazard - Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- Do not install or remove SCSI devices or cards while circuit is alive.

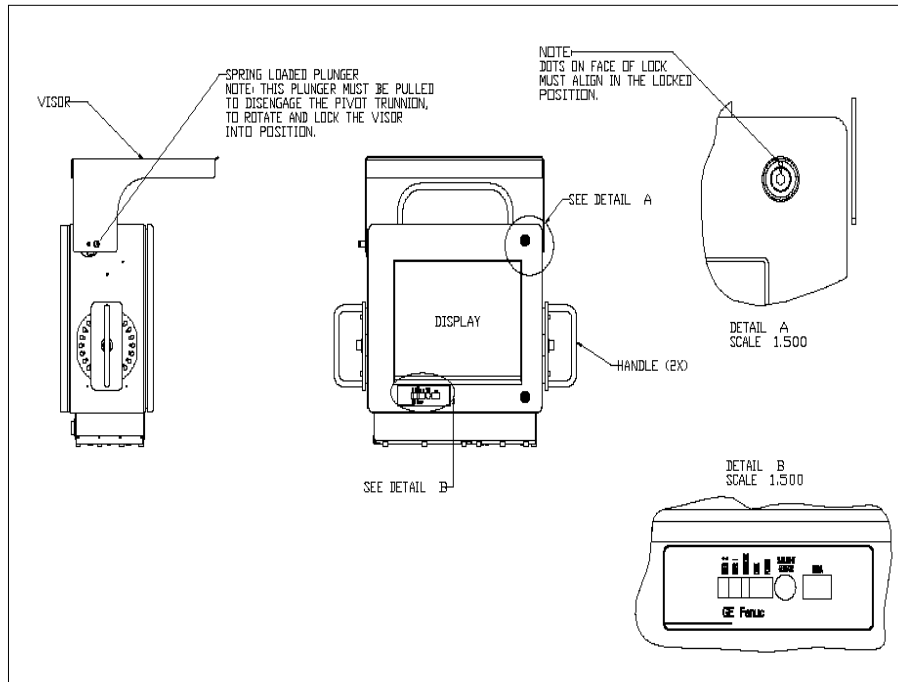
Note

The proper method for removing power from the unit is to switch off power at the circuit breaker.

Warnings for ATEX Compliance

- WARNING-EXPLOSION HAZARD - Explosion protection provided by door seal. Do not open access door except in an area known to be non-hazardous.





Chapter 3

Connectors & Cabling

This chapter describes the connector layout and cabling on the standard Model SV-WC15 industrial computer. All power and communication connectors are described in this section.

Communication connectors are provided from the main CPU motherboard. These connectors are contained in the Doghouse on the bottom of the unit.

- PS/2 Keyboard (bottom access), MIL-STD connector (external access)
- PS/2 Mouse port (bottom access), MIL-STD connector (external access)
- Three serial ports, COM1 and COM2 (bottom access). (COM3 is connected internally to the Environmental Control Board. COM4 is connected internally to the touch screen.)
- Parallel port (bottom access)
- Two USB ports (bottom access)
- Ethernet 10/100 base T (RJ-45) (bottom access)
- Optional Ethernet: 10BASE2 Coaxial or 10/100 BASEF (bottom access)
- RS232 Terminal Block Strip (Optional)

For details about connectors on proprietary cards you have installed in your industrial computer, refer to the manufacturer's documentation provided with your card.

Power Input

Model SV-WC15 industrial computers are powered by an internal, auto-ranging AC power supply unit that accepts 90 to 264 VAC input ranges. The power supply unit houses an integral ventilation fan that provides cooling for the power supply.

The power supply input to the industrial computer uses a terminal block that shall be connected to no greater than a 20 AMP branch circuit. To remove power from the unit, the proper method is to switch off power at the circuit breaker

For power supply details, refer to specifications in Appendix A. There are no user-serviceable fuses.

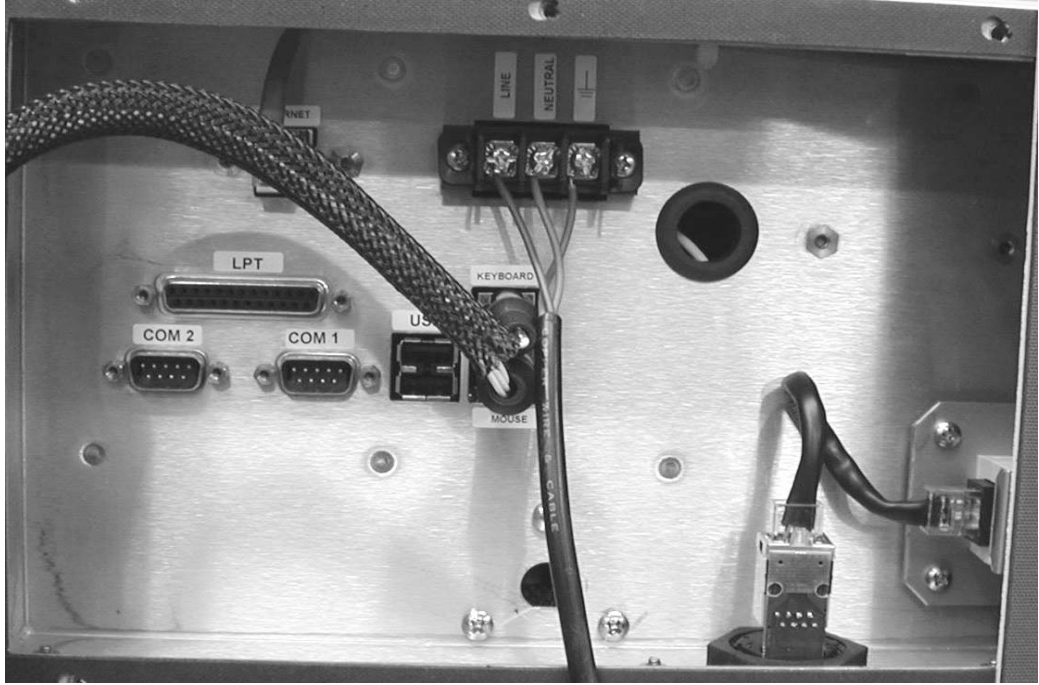
Connector Layout

Caution

External devices should not be powered up when connecting to communication ports.

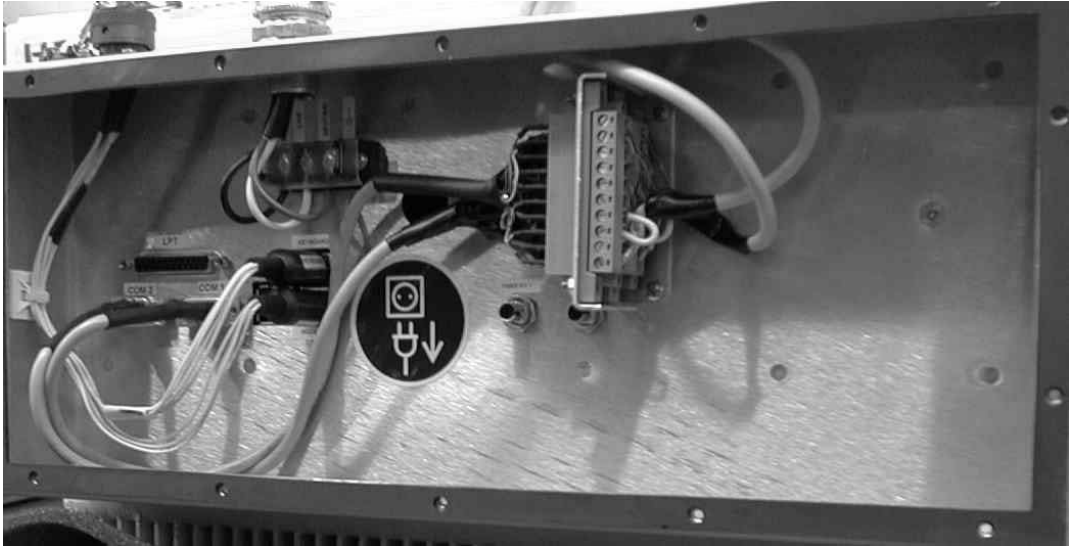
Bottom Panel Connectors

The bottom access panel plate is held secure by eight screws that can be fastened by hand. Two glands allow cabling to access the bottom panel connectors.



RS232 Terminal Block Strip (Optional)

Two optional RS232 terminal blocks can be provided upon customer request to allow for easier connectivity to Com1 and Com2.

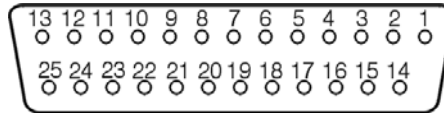


Pinout

Terminal Block	Signal Name	Color
1	DCD	Red
2	RX	Orange
3	TX	Yellow
4	DTR	Green
5	GND	Blue
6	DSR	Purple
7	TRS	Brown
8	CTS	Gray or White
9	RI	Black
10	SHIELD	Drain Wire

Printer Port LPT1

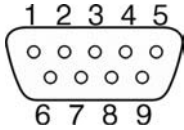
A 25-pin D-type female printer port connector is located at the bottom access panel and labeled accordingly. The printer port is intended to be used on a temporary maintenance basis.



Pin	Assignment	Pin	Assignment
1	Strobe	10	Acknowledge
2	Data Bit 0	11	Busy
3	Data Bit 1	12	Paper End
4	Data Bit 2	13	Select Out
5	Data Bit 3	14	Auto Feed XT
6	Data Bit 4	15	Error
7	Data Bit 5	16	Initialize Printer
8	Data Bit 6	17	Select In (from Printer)
9	Data Bit 7	18 to 25	Ground

Serial Communication Ports

The COM1 and COM2 serial ports are available on the bottom panel. The COM3 serial port is used by the Environmental Control Board and is not accessible to the user. The COM4 serial port is used by the touchscreen and is not accessible to the user. The standard 9-pin D-sub connector pin out is shown below.



RS-232C Name	Pin	Assignment
CF	1	DCD (Data Carrier Detect)
BB	2	RX (Receive Data)
BA	3	TX (Transmit Data)
CD	4	DTR (Data Terminal Ready)
AB	5	GND (Signal Ground)
CC	6	DSR (Data Set Ready)
CA	7	RTS (Request to Send)
CB	8	CTS (Clear to Send)
CE	9	RI (Ring Indicator)

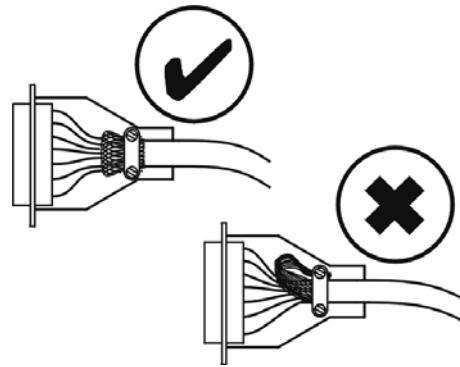
RS485 Option:

Pin	Assignment
3	DATA-
4	RTS-
5	GND
8	DATA+
9	RTS+

Shielding

In order to provide higher EMC immunity and maintain CE Mark compliance, the serial cables must comply with the following requirements:

- The cables must be shielded.
- The D type connector covers must provide EMC shielding (e.g. metallized plastic or die cast metal covers).
- The cables must be terminated with 360-degree termination of the shield, as illustrated below.



USB Ports

The two USB ports are 1.0 compliant and are located on the bottom access panel.

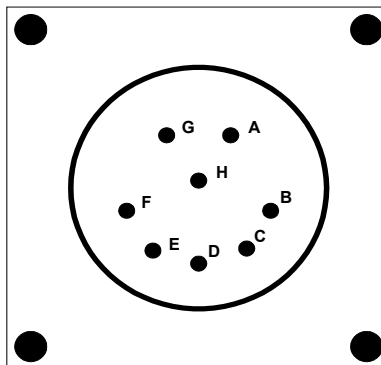
This temporary connection is intended for such things as initial setup, downloading data, uploading software, etc.

Mouse & Keyboard Ports

A MIL-STD connector is available on the bottom gland access door to allow connection to keyboard and mouse without entry into doghouse. This temporary connection is intended for such things as initial setup, downloading data, uploading software, etc.

Two PS2 ports are also available on the bottom panel and labeled accordingly. This temporary connection is intended for such things as initial setup, downloading data, uploading software, etc.

MIL-STD Keyboard/Mouse connector:



Connector Pin	Signal
A	KB Clock
B	KB Data
C	GND
D	+5V
E	Mouse Data
F	Mouse Clock

Network Interface Port

A RJ-45 Ethernet connector is available on the bottom panel for connecting unshielded twisted pair cable.

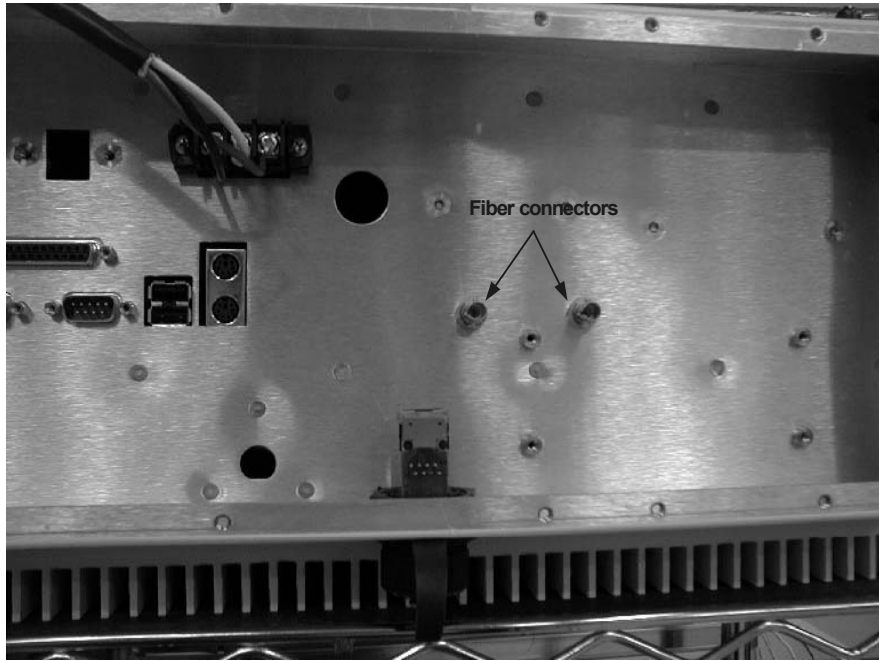
Optional 10BaseT2 connector requires connection to a shielded cable in order to provide higher EMC immunity and maintain CE Mark compliance.

In the 10BASET2 coaxial Ethernet option, the coaxial cable must be connected to the Ethernet transient protector. The coaxial cable will access the ‘doghouse’ through a bulkhead connector. The picture below shows the coaxial connector for the transient protector.

A fiber converter located in the main enclosure provides optional 10/100BaseF. Fiber is brought into the doghouse by two panel mount fiber connectors, one for transmit and one for receive.



Fiber option:



This chapter provides details of system operation. The following topics are covered:

- Setup
- System Peripherals
- External Keyboard and Mouse
- Graphic System
- Operator Interfaces
- Communications
- Shutdown

Setup

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D or nonhazardous locations only. Before you attempt to power up the system for the first time, inspect the unit for loose or damaged components.

Before you power up your system, you may want to attach a standard PS/2-type keyboard and mouse to the external ports on the industrial computer. Most configuration activities that you perform on the unit can be more easily completed using a keyboard and mouse.

Powering Up the Model SV-WC15 Industrial Computer

Caution

Do not connect or disconnect external devices, such as a printer, keyboard, mouse, USB, or Ethernet while the unit is powered on and the area is considered hazardous. Do not install or remove SCSI devices and PC cards while circuit is alive. Failure to observe this precaution could result in damage to the equipment.

The system will power up at the instant that power is applied to the unit. The power cord must be connected by the user via the Doghouse. Product shall be connected to no greater than a 20 AMP branch circuit.

Caution

Do not connect the power cord while power is applied to the power cord. Failure to observe this precaution could result in damage to the equipment and possible harm to the user.

During power up, the processor will run its normal diagnostic checks and indicate the presence of any errors with a screen prompt.

Explosion Hazard

Do not disconnect equipment unless power has been switched off or the area is known to be nonhazardous.

System Peripherals

Internal Hard Disk Drive

The Model SV-WC15 industrial computer system has a single internal hard disk drive. The disk drive has a standard EIDE/ATA-2 interface. The standard size is 10GB or larger.

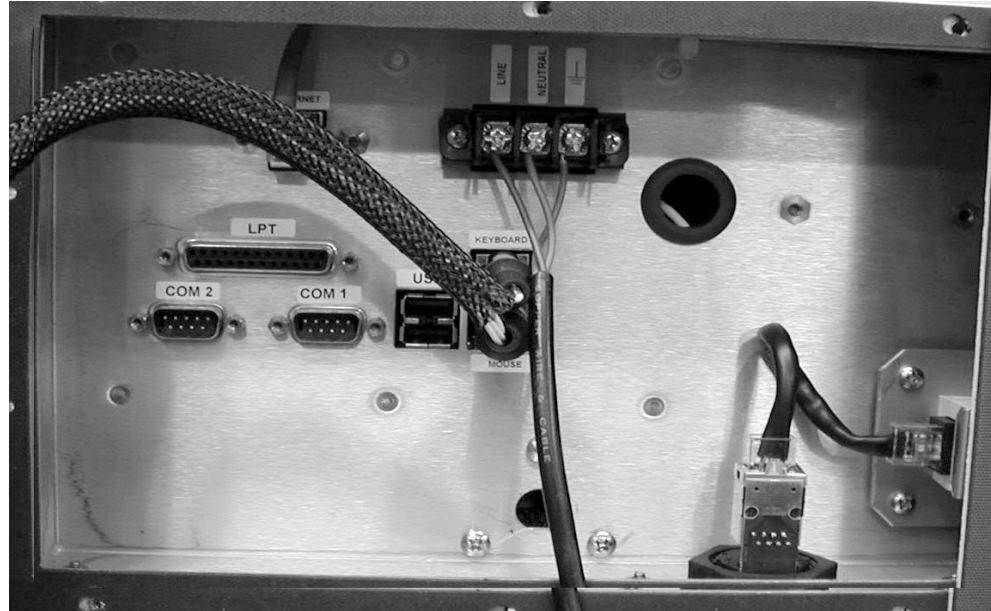
PCMCIA SLOTS

Model SV-WC15 industrial computers include two board mounted PCMCIA slots. These are only accessible by opening the front door and are not recommended for customer access.



External Keyboard and Mouse

An external PS/2 keyboard and mouse can be attached via the military spec connector on the bottom of the Doghouse.



The touch screen and PS/2 mouse will work simultaneously if the mouse is Microsoft or IBM PS/2 compatible.



Graphic System

The standard Model SV-WC15 industrial computer includes a 15 inch color TFT (XGA resolution) screen. The flat screen display has the following features:

- High Luminance (equal to or greater than 200cd/m²)
- Wide angle viewing
- A built-in back light with a long life back light tube (equal to or greater than 50,000 hrs),

Operator Interfaces

Control and Status Functions

The Model SV-WC15 industrial computer includes a status LED panel, located in the lower left hand area on the front of the unit. The LEDs have the following functions:

Indicators

LEGEND	Function
PWR	Indicates system power (lighted when power is applied).
HDD	Indicates IDE drive activity when an IDE device is being read from or written to.
NETWORK	Indicates the Ethernet is transmitting data.
USER 1	User1 is tied to ICH2_GPIO20 to indicate a temperature or voltage error in the system.
USER 2	User2 is controlled through I/O address A80 bit 2.

Touch Screen

The Model SV-WC15 includes a Near Field Imaging touch screen on the flat panel display.

The touch screen has a resolution of 1024 x 1024 touch points (independent of screen size) and provides an efficient and reliable method of entering information. The screen responds to the touch of your finger with or without a glove.

The touch screen is connected internally to the COM 4 serial port. If you install a card that has settings that conflict with those of the COM 4 serial port, you will need to change the card's configuration.

Touch Screen Driver for Windows

The integral touch screen of the Model SV-WC15 is internally connected to COM4. Parameters must be set within the driver so that they match the hardware settings. The factory default settings are:

COM Port = 4
Address = 2E0 Hex
Interrupt = 9

These parameters are written into the system registry file by the driver setup utility. The driver is installed, configured and calibrated at the time of manufacture.

Communications

Your industrial computer has been configured with networking components that enable you to establish new networks or connect to existing networks easily. If you intend to use Microsoft NetBEUI, TCP/IP, or Direct Cable Connection, some minimal setup changes are required before you can use the system for network applications. In Windows 2000, NT, or XP systems, these settings are changed using the Network application in the Control Panel program group.

Installed Network Components

Network Component	Comments
PCI Network Adapter	Automatically configured in system
TCP/IP	Default settings must be changed before connecting to an existing network. Contact your network administrator for appropriate settings.
NetBEUI	Default settings must be changed before connecting to an existing network. Contact your network administrator for appropriate settings.
System Identification	Computer Name: Each system is uniquely identified by its serial number and can be renamed before adding it to an existing network Workgroup: The default workgroup is Workgroup . This should be renamed before adding it to an existing network.

Caution

The IP Address must be changed to a unique address. If it is not changed, conflicts could occur on your network.

Note

For Windows 2000, NT, or XP systems: If any component is removed and re-installed, the Service Pack will need to be run after installation. Path is:

C:\SP4\SP4i386.exe

Shutting Down the Computer

Caution

To avoid damaging files, always shut down Windows software before removing power from your Model SV-WC15.

To shut down Windows 2000, NT, or XP software, select Shut Down from the Start menu.

Chapter 5

BIOS Settings

It is normally not necessary to change the hardware configuration settings in the CMOS memory. If settings become corrupted, follow the procedures here to reload the factory configuration.

1. Power down the computer, connect a keyboard and turn on the power. Enter the Setup mode by pressing the F2 key when prompted during the computer power-up sequence. The main BIOS setup utility screen will appear offering several options for changing settings.
2. Once in the Bios press the F9 key – this will restore all defaults.
3. To save your changes, press ESC. In the Exit menu, select Exit Saving Changes.

Chapter 6

Diagnostics and Troubleshooting

This chapter consists of “Self-Test Diagnostics,” “Troubleshooting,” and “Corrective Actions.” “Self-Test Diagnostics,” describes how to respond to errors that could be detected by the automatic self test that is performed each time the Model SV-WC15 industrial computer powers up. “Troubleshooting” contains tables of symptoms, their possible causes, and recommended corrective actions. “Corrective Actions” contains detailed procedures that are too lengthy to include in the Troubleshooting tables.

Self-Test Diagnostics

The computer automatically performs self-test diagnostics each time it is powered up. The self-test consists of a series of checks that verify correct performance of the computer hardware. When the self-test is being performed, you will see the message XXXX M OK displayed on the screen, where XXXX is a number that increases until it matches the amount of usable memory.

System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will see an error message on the screen. There are two kinds of errors: fatal and non-fatal. If a non-fatal error occurs, the system can usually continue the boot up sequence. Non-fatal error messages usually appear on the screen with the following instruction:

press <F1> to RESUME

Write down the message and press the F1 key to continue the bootstrap sequence.

System Configuration Verification

These routines check the current system configuration against the values stored in the CMOS memory. If they don't match, the program will generate an error message. To correct this condition, you will need to run the BIOS setup program and correct the configuration information in memory.

There are three situations in which you might need to change the CMOS settings:

1. You are starting your system for the first time.
2. You have changed the hardware attached to your system.
3. The CMOS memory had lost power and the configuration information has been erased. If this has happened, call GE Fanuc's Support Hotline at 1-800-GEFANUC (800-433-2682).

Troubleshooting

Power up

Symptom	Possible Causes	Solution
Computer does not power up.	Power not on (PWR indicator is not lit or display completely dark).	Make sure that computer is plugged in. Make sure that power source is functioning properly.
Display is blank (PWR indicator is lighted).	See “Display” topic in this Chapter	See “Display” topic in this Chapter
Safe Recovery Error message displayed.	Occurs on initial power up if the unit is accidentally turned off without first shutting down the Windows software.	The computer will power up normally.
CMOS checksum error – Defaults loaded CMOS battery failed message displayed.	CMOS battery failure.	This battery has a lifetime of up to 10 years under normal operating conditions. For more information, see “CMOS Checksum Error” topic in this chapter.
A screen appears just after powerup, or just after reset, which has the title “CMOS Setup Utility.”	The F2 key has been accidentally pressed.	Cycle power again. The computer will power up normally.
The computer has reset even though the power was not interrupted.	The CTRL-ALT-DEL keys were pressed twice at the same time.	This should never be done, unless you are attempting to reset the computer.

Display

Symptom	Possible Causes	Solution
Characters are dim.	Computer screen is in direct light.	Change lighting or adjust contrast.
Display is blank (PWR indicator is lit).	System temperature is outside operating range.	Keep unit in -40C to 50C temperature range.
	Computer is set up for invalid video mode.	Reboot. Select VGA Mode
	Screen saver is active.	Touch the screen.

Memory

Symptom	Possible Causes	Solution
Out of Memory message is displayed or insufficient memory error occurs during operation.	System ran out of memory for the application.	Check the memory requirements for the application. (Refer to the application documentation.)
	Too many terminate and stay resident (TSR) programs running.	Modify the startup folder to use only those TSR applications that are really needed.

External PS/2 Mouse

Symptom	Possible Causes	Solution
Cursor does not respond to mouse movement	Mouse not plugged in.	Power down computer. Plug mouse into mouse port on computer and reboot.
	The type of mouse is not supported.	Use a PS/2 mouse.
	System is busy.	Press CTRL-ALT-DELETE to view task list.
	Mouse not detected.	Restart computer with external mouse connected.

Keyboard

Symptom	Possible Causes	Solution
External keyboard locks up	The type of keyboard is not supported.	Use PS/2 compatible keyboard
	Keyboard not plugged into keyboard port on the computer.	Plug keyboard in. (Power down computer first.)
	System is busy.	Press CTRL-ALT-DELETE to view task list.

Communications

COM Port Connection

Symptom	Possible Causes	Solution
Communications between the host computer and the controller are unsuccessful.	COM port not configured in system.	Verify that the COM port is configured in the system.
	Cabling between computer and controller.	Verify that the cable between the computer and the controller is correctly wired.
	Baud rate and parity configured incorrectly.	Verify that the baud rate and parity on the computer are consistent with those on the controller.
	Wrong address.	Verify that the slave address is correct.

Network Communications

Symptom	Possible Causes	Solution
Conflicts on network.	IP Address not unique.	Change the IP address to a unique address. (Contact your system administrator if this or other settings need to be changed.)
	Identical computer name.	Change computer name. Computers cannot share computer name on network.

Printing

Symptom	Possible Causes	Solution
Printer will not turn on.	Cables not connected properly. Printer power cord not plugged in.	Ensure that the cables are properly connected and that the power cord is connected to the electrical outlet.
Printer will not print.	Printer is not turned on.	Turn on the printer
	Printer is not online.	Set the printer to online.
	The device drivers for your application are not installed.	Install the correct printer drivers for your application in Windows.
	Printer that is set up for a network is not connected to the network.	Connect the printer to the network.
	Printer cable is too long, unshielded, or defective.	Replace the cable.
Printer is offline.	Paper tray is empty.	Fill the paper tray with paper. Set printer to online.
Printer prints garbled information.	Correct printer drivers not installed.	Install the correct printer driver.
	Cable is not connected properly.	Ensure that the printer cable is connected properly to the computer.
	Problem specific to printer.	Run a printer self-test. Refer to the documentation provided with your printer for instructions. If the self-test fails, the problem is printer-specific. The printing section of the software documentation and in Windows online Help may also be helpful.

Corrective Actions

CMOS Checksum Error

If the CMOS battery has failed, the following error messages will be displayed on the screen:

`CMOS checksum error - Defaults loaded`

`CMOS battery failed`

This battery has a lifetime of up to 10 years under normal operating conditions. If the battery failed, contact the GE Fanuc Hotline.

Mechanical Specifications

Front Assembly

The Model SV-WC15 industrial computer provides a display screen, a touch screen, and an access panel.

Main Chassis

The main chassis is manufactured from aluminum and houses the motherboard, which is mounted securely in a vertical plane. PC/104 add on boards plug directly onto the motherboard.

Bottom Cover

The bottom cover of the unit is fixed to the main chassis so that EMC emissions are minimized. The cover can be removed easily with finger screws without breaking any electrical connections.

Yoke Mounting System

Two trunions are mounted on either side of the unit to allow mounting to a yoke.

Functional Specifications

CPU and Memory	
Microprocessor	Intel Celeron 566MHz minimum*
User Memory	Minimum 128Mbyte*
Operating System	Windows 2K, NT, or XP
Hard Disk	10Gbyte minimum*, IDE standard 2.5 inch mounting
Two PCMCIA Slots	16 or 32 bit PC Cards
Disk On Chip	Optional
PC/104 connector	Approved Cards installed upon customer request

Display	
Display Variants	15 inch Color TFT – XGA
Active Display Area	15 inch - 246 x 184.5 mm

Power Requirements	
AC Input	90 to 264 VAC, 280W autoranging
Power Rating	90 to 264 VAC, 47 to 63Hz; 8.3A max

* Contact your local distributor for upgrades.

Ports	
Parallel Port	LPT1 (bottom accessible)
Serial Ports	COM1 external RS232 port (bottom accessible), Optional RS485 COM2 external RS232 port (bottom accessible) , Optional RS485 COM3 used by Environmental Control Board COM4 used by touch_screen
Keyboard Port	PS/2 (bottom accessible), MIL-STD connector (external accessible)
Mouse Port	PS/2 (bottom accessible), MIL-STD connector (external accessible)
USB Ports	USB1 external USB port (bottom accessible) USB2 external USB port (bottom accessible)

Physical	
Dimensions	
Main Enclosure	536mm wide (21.1 inches) 986mm high (38.8 inches) 384mm deep (15.1 inches)
Weight (base unit with no optional cards installed)	28.4Kg (62.7lbs) with Yoke 23.5Kg (51.8lbs) without Yoke

Appendix
B

*Agency Approvals, Government Regulations
& General Specifications*

Agency Approvals

Description	Agency Standard or Marking	Comments
North American Safety for Industrial Control Equipment	UL508/C-UL	Certification by Underwriter's Laboratories to UL standard and equivalent CSA standard
North American Safety for Hazardous Locations Class I, Div. 2, Groups A, B, C, D	UL1604/C-UL	Certification by Underwriter's Laboratories to UL standard and equivalent CSA standard
North American Safety for Hazardous Locations Class I, Zone 2, Groups IIA, IIB, IIC	UL2279	Certification by Underwriter's Laboratories to UL standard
Explosive Atmospheres Directive European Safety for Hazardous Locations Equipment Group II, Category 3	ATEX	Certification in accordance with European Directives; Refer to Declaration of Conformity
Low Voltage Directive European Safety for Industrial Control Equipment	CE	Self-Declaration in accordance with European Directives; Refer to Declaration of Conformity
Electromagnetic Compatibility Directive European EMC for Industrial Control Equipment	CE	Certification by Competent Body in accordance with European Directives; Refer to Declaration of Conformity

Government Regulations

U.S., Canadian, Australian and European regulations are intended to prevent equipment from interfering with approved transmissions or with the operation of other equipment through the AC power source.

The SV-WC15 has been tested and found to meet or exceed the requirements of U.S. (47 CFR 15), Canadian (ICES-003), Australian (AS/NZS 3548), and European (EN55022) regulations for Class A digital devices when installed in accordance with the guidelines noted in the appropriate product section. These various regulations share commonality in content and test levels with that of CISPR 22 and based on this commonality testing to the each individual standard was deemed inappropriate.

The FCC requires the following note to be published according to FCC guidelines:

Note

This equipment generates, uses, and can radiate radio frequency energy and, if not installed in accordance with this instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules, which are designed to provide reasonable protection against harmful interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Industry Canada requires the following note to be published:

Note

This Class A digital apparatus complies with Canadian ICES-003.

General Specifications

Environmental Conditions	
Temperature	
Operation	-40°C to 50°C
Storage	-40°C to 70°C
Humidity	5 to 95% RH (non-condensing)
Enclosure Protection	NEMA 4, 4x and 12
Vibration (Operating)	(IEC 68-2-6) 10 - 57 Hz, 0.012" displacement peak-peak 57 - 500 Hz, 1.0g acceleration
Shock (Operating)	(IEC 68-2-27) 15g, 11ms, sinusoidal

EC Declaration of Conformity



EC DECLARATION OF CONFORMITY

Manufacturer Name & Address:

Computer Dynamics
7640 Pelham Road, Greenville, SC 29615 USA

We declare, under our sole responsibility, that the following product identified in this declaration,

Product Family **Survivor - Wildcat**
Model # **SV-WC15**

is in conformity with the provisions of the following EC Directive(s) when installed in accordance with the Installation manual:

EMC DIRECTIVE:

We hereby certify that the apparatus described above conforms with the Electromagnetic Compatibility requirements of Council Directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC on the approximation of the laws of the Member States. Attestation is provided according to article 10 (2) of the Directive by a Technical Construction File.

File #: 44A749864 Dated: 5 July, 2000

The following standards are referenced:

EN50081-2: 1993, EN55011: 1998, EN55022: 1998,
EN50082-2: 1995, EN61000-6-2: 1999, EN61000-4-2: 1993, EN61000-4-3: 1996, ENV50204: 1996, EN61000-4-4: 1995,
EN61000-4-5: 1995, EN61000-4-6: 1996, EN61000-4-11: 1994
EN61000-3-2: 2000, EN61000-3-3: 1994

A Technical Report and Certificate have been issued in accordance with Part IV (Reg 50) of the UK Regulations (SI 1992 No. 2372) by a UK appointed Component Body, namely,

Technology International (Europe) LTD.
41-42 Shrivenham Hundred Business Park
Shrivenham, Swindon, Wilts. SN6 8TZ England, UK

Certificate Number: C1062GEF1.012 Dated: 30 October 2002

ATEX DIRECTIVE:

We hereby certify that the apparatus described above conforms with the protection requirements of Council Directive 94/9/EC on the approximation of the laws of the Member States generally concerning equipment and protective systems intended for use in potentially explosive atmospheres.

The following harmonized standard has been referenced:

EN50021:1999 Electrical apparatus for potentially explosive atmospheres - Type of protection "n"

A Technical File and Certificate of Conformity have been issued by an independent consultancy company, namely,

Technology International (Europe) LTD.
60 Shrivenham Hundred Business Park
Shrivenham, Swindon, Wilts. SN6 8TY England, UK

Certificate #: TI/108/0129 Dated: 29 January 2003
Technical File #: 44A752206 Dated: 26 July 2002

LOW VOLTAGE DIRECTIVE

We hereby certify that the apparatus described above conforms with the protection requirements of Council Directive 73/23/EEC (1973), as amended by 93/68/EEC (1993) EEC on the approximation of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits. Attestation is provided according to a Technical File. File #:

SVWC15 LVD

Tested according to and in compliance with the following standard: *EN61010-1: 1993*

Authorized Signatory:

Name/Title: Erik Matusek, Engineering Manager

Date: 2/4/03

The Authorized Responsible Person, based within the EC, is identified below:

Name: David Avrell
Title: President & CEO
Address: GE Fanuc Automation-Europe S.A.

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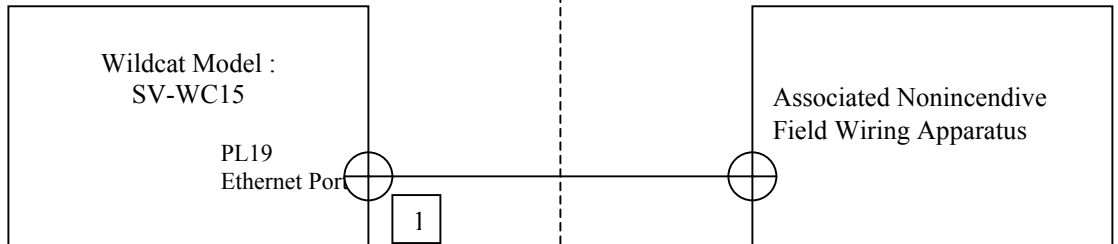
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DRW00168

Hazardous (Classified) Location
Class I, Division 2 Groups A, B, C and D

Non-Hazardous Area



Notes: *Nonincendive Circuit Parameters:*

Wildcat Model SV-WC15

V _{max} = 5VDC	V _{oc} = 5 VDC
I _{max} = 100mA	I _{sc} = 100mA
C _i = 0.1 uF	C _a = 1000 uF
L _i = 0 mH	L _a = 5 mH

- Selected Associated Nonincendive Field Wiring Apparatus shall satisfy the following:

Associated Nonincendive Field Wiring Apparatus	≤	Wildcat Model SV-WC15
V_{oc}	≤	V_{max}
I _{sc}	≤	I _{max}
C_a	≥	C_i + C_{cable}
L_a	≥	C_i + C_{cable}
V_{max}	≥	V_{oc}
I_{max}	≥	I_{sc}
C_i + C_{cable}	≤	C_a
L_i + L_{cable}	≤	L_a

- If the electrical parameters of the cable are unknown, the following values may be used:
 - Capacitance – 60 pF/ft
 - Inductive – 0,20 uH/ft
- Nonincendive Field Wiring must be installed in accordance with Article 501.4(B)(3) of the National Electrical Code ANSI/NFPA 70.

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