FOXBORO®
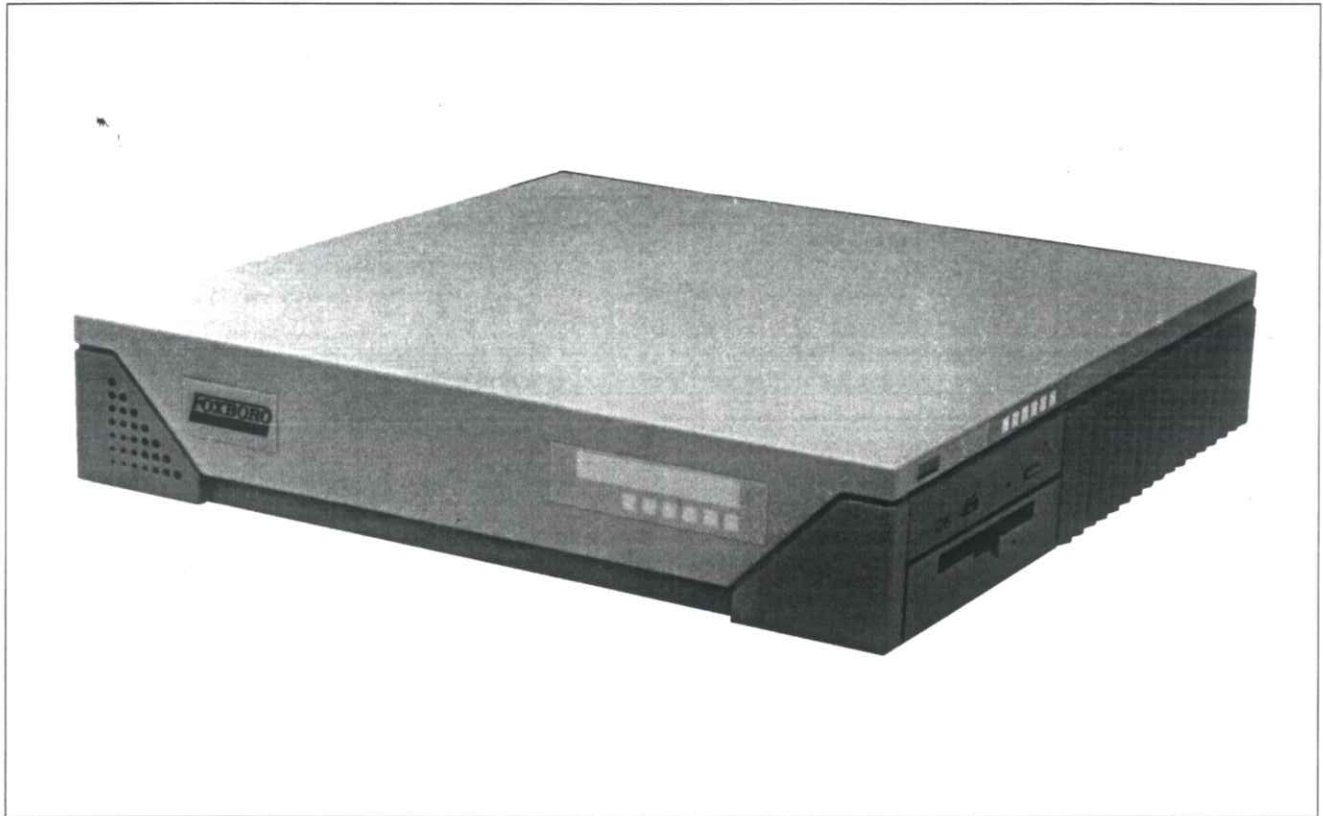
Cancelled Oct.1999

I/A Series® Hardware
50 Series Application Workstation Processor
AW51, Styles B and B1

The Application Workstation 51 (AW51) Style B Processor in conjunction with its peripherals performs both application functions and workstation functions. The AW51 is also available as an AW51 Style B1 option which has the same form factor and comparable performance to the Style B with reduced hardware configuration options (RAM, internal disks, and Sbus slots). All references to the Style B apply to both Style B and Style B1 unless explicitly referenced otherwise.

Application functions performed include:

- Execution of system application functions, such as those relating to:
  - Displays
  - Production control
  - User applications
  - Diagnostics
  - Configuration
- Development and execution of a broad range of application functions (Foxboro and other) requiring extensive data processing and file serving capabilities.
- Processing of bulk storage file requests from tasks within the Application Workstation 51 Style B Processor or from other stations.

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Product Specifications

Workstation functions performed by the Application Workstation 51 Style B Processor include:

- Generation of video signals to display graphic and textual display information on a video monitor, either 20-inch or 17-inch.

- Processing of signals for command and data entry, display option selection, and alarm management. The signals are received via connected input devices which may include a touchscreen (20-inch CRT only), a mouse, trackball, industrial pointing device, an alphanumeric keyboard, and up to two annunciator or annunciator/numeric keyboards (per CRT).

A Small Computer System Interface (SCSI), designed into the Processor, provides an industry standard bus to support peripherals having SCSI compatible controllers. Connected hard disk drives may be configured mirrored (redundant) for maximum system security and data availability. Other SCSI devices connected may include a CD-ROM and tape drives.

Electrical interfacing with the I/A Series Nodebus is achieved using a Dual Nodebus Interface Module or Dual Nodebus Interface Extender Module (refer to PSS 21H-7B2 B4).

Optional SBus Token Ring, AUI or twisted pair Ethernet, Fast Ethernet, and Asynchronous Transfer Mode communications ports provide for connection to other networks such as DECnet or TCP/IP.[1]

Electrical interfacing between the Application Workstation 51[2] with FoxBlock software and I/O devices is accomplished with:

- An I/A Series Fieldbus interface card for I/A Series Fieldbus Modules, Fieldbus Cards, SPECTRUM Migration Integrator.

- A Serial interface card for RS-232C connectivity to Modicon Programmable Controllers or Allen-Bradley PLCs

- An Ethernet card (port) for connectivity to Allen-Bradley PLCs and Foxboro SCADA

The Application Workstation 51 Styles B and B1 contain the following elements:

- Processor logic
- Dynamic memory
- Nodebus interface port
- Video interface
- Serial interface port (printer or terminal port)
- Parallel interface for PostScript printer
- 3.5-inch 1.44 MB floppy disk
- Small Computer System Interface (SCSI)
- Maximum of 4 hard drives per SCSI port:[3]
  Style B only
  - Internal system disk: 1.05 GB or 2.1 GB
  - One optional internal expansion disk: 1.05 GB or 2.1 GB
  Style B1 only
  - Internal system disk: 1.05 GB
  Both Style B and B1
  - Optional external system disk: 2.1 GB
  - Optional external expansion disks: 2.1 GB
- Optional external drives for disk mirroring configuration: 2.1 GB[4]
- Optional internal or external 644 MB CD-ROM drive
- Optional external 2.5 GB Quarter-Inch Cartridge (QIC) tape drive
- Optional external 5.0 GB 4 mm digital tape drive
- Optional SBus Cards supported:
  (Style B supports up to 2 optional SBus cards; Style B1 supports 1 optional SBus card)
  - IBM Token Ring communications port
  - AUI 10 Mbits/sec Ethernet communications port
  - A second SCSI port for disk mirroring and a twisted pair 10 Mbits/sec (slow) Ethernet communications port
  - A second SCSI port for disk mirroring and a twisted pair 10 or 100 Mbits/sec (slow or fast) Ethernet communications port
  - ATM 155 Mbits/sec network connection via twisted pair communications port
  - ATM 155 Mbits/sec network connection via fiber cable communications port
  - An I/A Series Fieldbus interface port
  - A Serial/Parallel interface port
  - Windows on I/A Series Systems for running MS-DOS and Microsoft Windows 3.1 applications in a separate local window
  - A TGX color buffer card for dual CRT configurations

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(1) A separate security router may be required in conjunction with these optional information network connections to isolate I/A Series from other unrelated network traffic. Foxboro Information Technology and Applications Consulting can provide information network planning and recommendations.

(2) The AW51 Style B supports two optional slots; the AW51 Style B1 is not used with FoxBlocks Software and I/O devices.

(3) A maximum of 2 internal drives for Style B (1 internal drive for Style B1) and a total of 4 internal and/or external drives are supported on the primary SCSI port.

(4) The disk mirroring option is supported on systems with external system and external expansion disk drives only. The option is not supported on systems with internal drives. A second SCSI port supports the mirrored disks.

FUNCTIONAL SPECIFICATIONS

Devices Served
SCSI PERIPHERALS[a,b]

A maximum of seven (up to three internal; up to four external) devices connected to the primary SCSI port: Up to four hard disk drives, one CD-ROM drive, one digital tape drive, and one QIC tape drive

NON-SCSI PERIPHERALS

One 1.44 MB 3.5-inch Floppy Drive[c]

VIDEO INTERFACE

Color Video Monitor (up to two)

SERIAL INTERFACES[d]

Alphanumeric Keyboard

Mouse or Trackball

Annunciator or Annunciator/Numeric Keyboard (up to two per CRT)

Touchscreen (one per 20-inch CRT)

Printer

PARALLEL INTERFACE

PostScript Printer

Processor Type
MicroSPARC II RISC Processor and Floating Point Unit

Color Frame Buffer

RAM Memory
Style B: 32 MB, expandable to 256 MB

Style B1: 32 MB, expandable to 160 MB

Screen Presentation
REFRESH RATE

76 frames/s

COLORS

32 for user displays, eight for menu bar; selectable from a palette of over 16 million

MARKER SETS

Four sets, up to 255 markers in each set. Two (default) sets supplied by Foxboro, two can be created by user.

CHARACTER SETS

Four sets. Four (default) sets supplied by Foxboro; additional non-Foxboro sets also supplied.

RESOLUTION (PIXELS)

1152 horizontal, 900 vertical Video Output

TYPE

Analog (EIA RS–170): Red, Blue, Green, Sync.

Maximum Cable Length

30 m (100 ft.) for 20-inch monitor

1.8 m (6 ft.) for 17-inch monitor

Nodebus Interface Communications
TYPE

IEEE 802.3 data bus and EIA RS-423 control bus[e]

Maximum Distance from Nodebus using Dual Nodebus Interface Module

50 m (150 ft.)

Maximum Distance from Nodebus using Dual Nodebus Interface Extender Module

450 m (1500 ft.)

Ethernet Interface Communications
TYPE

AUI Cable

Maximum Distance

50 m (150 ft)

TYPE

AUI Cable and RG-58 Coaxial (ThinNet/10 Base 2)

Maximum Distance of AUI Cable on Either Side of RG-58 Cable

50 m (150 ft)

Maximum Distance of RG-58 Coaxial Cable

150 m (500 ft)

TYPE

RG-58 Coaxial (ThinNet/10 Base 2)

Maximum Length

150 m (500 ft)

Serial Interface Communications
TYPE

EIA RS-423 (RS-232C compatible)

Distance

15 m (50 ft.)

Parallel Interface Communications
Centronics Parallel Interface for Color Postscript Printer

[a] The maximum number of SCSI devices may be limited by maximum allowable equivalent cable length (6 meters).

[b] Small Computer System Interface (ANSI Standard ANSC X3T9.2).

[c] Floppy drive is mounted internally or in the Modular Industrial Workstation wedge.

[d] One serial interface communication port provides for peripheral communications: a printer or a group of serially-connected input/output devices: Touchscreen and up to two Annunciator or Annunciator/Numeric Keyboards per CRT.

[e] Refer to PSS 21H-7B2 B4, Dual Nodebus Interface and Dual Nodebus Interface Extender for information on how the control bus is used.

FUNCTIONAL SPECIFICATIONS (Cont.)

Error Detection
COMMUNICATION ERRORS
  Cyclic redundancy codes (CRC) and checksum codes
MEMORY ERRORS
  Parity code
FLOPPY DISK ERRORS
  CRC and Reed-Solomon codes (used for error detection and correction)
SCSI ERRORS
  Parity code

Power Requirements
INPUT VOLTAGE
  100-120 V ac or 200-240 V ac (auto-switching)
NOMINAL POWER
  60 W

Internal Diagnostics
Self-checking performed at power-up. Runtime checks and watchdog timer function performed during operation.

Optional TGX Color Buffer Card
Supports second monitor in a dual CRT configuration

Optional IBM Token Ring Communications Card[f]
Supports port for IBM Token Ring data bus

Optional AUI Ethernet Communications Card[f]
Supports port for AUI 10 Mbits/sec Ethernet data bus

Optional Fast SCSI Port Plus Twisted Pair 10 Ethernet Communications Port[f]
Supports both fast SCSI used for support of disk mirroring and 10 Mbits/sec (slow) Ethernet twisted pair data bus communications port

Optional Fast SCSI Port Plus Twisted Pair 10/100 Ethernet Communications Port[f]
Supports both fast SCSI used for support of disk mirroring and 10 or 100 Mbits/sec (slow/fast) Ethernet twisted pair data bus communications port

Optional ATM 155 Mbits/sec Twisted Pair Ethernet Communications Port[f]
Supports port for ATM155 Mbits/sec network connection via twisted pair connections

Optional ATM 155 Mbits/sec Fiber Communications Port[f]
Supports port for ATM155 Mbits/sec network connection via fiber optic connections

Optional Windows on I/A Series Systems
HARDWARE
  486DX Accelerator Card
SOFTWARE
  SunPC software package
MEMORY REQUIREMENTS
  32 MB of RAM required; 48 MB recommended

ENVIRONMENTAL SPECIFICATIONS

Operating
TEMPERATURE
  0 to 40°C (32 to 104°F)
RELATIVE HUMIDITY
  5 to 95%, noncondensing
ALTITUDE
  0 to +3,000 m (0 to +10,000 ft.)

Storage
TEMPERATURE
  −40 to +75°C (−40 to +167°F)
RELATIVE HUMIDITY
  5 to 95%, noncondensing
ALTITUDE
  −300 to +12,000 m (−1,000 to +40,000 ft.)

PHYSICAL SPECIFICATIONS

Configuration and Mounting
Consists of a single module having an C-Module form factor. May be mounted in an I/A Series Industrial Enclosure or Modular Industrial Workstation Bay, on a table-top, or in a 19-inch rack (using a Foxboro-designed modular mounting structure)
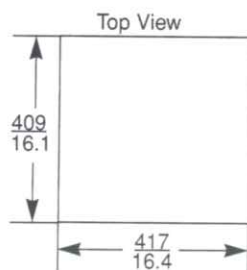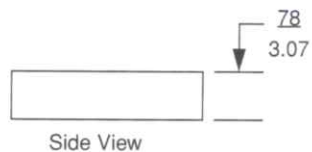
Mass (Maximum)
12.7 kg (27.0 lb)

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DIMENSIONS—NOMINAL

$$\frac{mm}{in}$$

Top View

$\frac{409}{16.1}$

$\frac{417}{16.4}$

Front

$\frac{78}{3.07}$

Side View