FOXBORO®

PSS 21H-3B8 B4

I/A Series® Hardware
50 Series Application Processor AP51, Styles B and B1

The Application Processor 51 Style B is a full function application processor also available as a lower cost, reduced function Application Processor 51 (Style B1). The AP51 Style B1 has the same form factor and comparable performance to the Style B with reduced hardware configuration options in terms of memory, internal disks, and Sbus slots. References to Style B apply to both Style B and Style B1 unless explicitly referenced otherwise.

The Application Processor performs one or more of the following functions in an I/A Series System:

- Execution of application functions, such as those relating to:
  - Displays
  - Production control
  - User applications
  - Diagnostics
  - Configuration
- Development and execution of applications functions (Foxboro and other) requiring extensive data processing and file serving capabilities.
- Processing of bulk storage file requests from tasks either within the same application processor or from other stations.

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Product Specifications

In conjunction with one or more file storage devices (e.g., disk drives), Application Processor 51 Style B can be used to load other stations in the system. It can also be used to execute production control tasks such as data reconciliation, spreadsheet, and performance calculations; provide support facilities such as operator "help"; and provide application development facilities such as compilers, linkers, and text editors.A Small Computer System Interface (SCSI), designed into the Application Processor 51 Style B provides an industry standard bus to support peripherals having SCSI compatible controllers. Connected hard disk drives may be configured redundant and mirrored for maximum system security and data availability.

Electrical interfacing with the I/A Series Nodebus is effected via 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 (ATM) communications ports provide for connection to other networks such as DECnet or TCP/IP.(1)

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

- Processor logic
- Dynamic memory
- Nodebus interface port
- 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:(2)

  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: 1.05 GB or 2.1 GB
  - Optional external expansion disks: 1.05 GB or 2.1 GB
- Optional external drives for disk mirroring configuration: 1.05 GB or 2.1 GB(3)
- Optional internal or external 644 MB CD-ROM drive
- Optional external 2.5 GB QIC tape drive
- Optional external 5.0 GB 4 mm digital tape drive
- Optional SBus Cards supported:
  (Style B supports up to 3 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

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

(2) 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.

(3) 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)

SERIAL INTERFACE

Printer or Video Terminal

PARALLEL INTERFACE

PostScript Printer

Processor Type

MicroSPARC II® RISC Processor and Floating Point Unit

RAM Memory

Style B: 16 MB, expandable to 256 MB

Style B1: 16 MB, expandable to 160 MB

Error Detection

COMMUNICATION ERRORS

Cyclic redundancy codes (CRC) and checksum codes

MEMORY ERRORS

Parity code

DISK ERRORS

CRC and Reed-Solomon codes (used for error detection and correction)

SCSI ERRORS

Parity code

Internal Diagnostics

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

Nodebus Interface Communications

TYPE

IEEE 802.3 data bus and

EIA RS-423 control bus(D)

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)

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

Optional Token Ring Communications Card(E)

Supports port for Token Ring data bus

Optional AUI Ethernet Communications Card(E)

Supports port for AUI 10 Mbits/sec Ethernet data bus

Optional Fast SCSI Port Plus Twisted Pair 10 Ethernet Communications Port(E)

Supports both fast SCSI used for support of disk mirroring and 10 Mbits/sec (slow) Ethernet twisted pair data bus communciations port

Optional Fast SCSI Port Plus Twisted Pair 10/100 Ethernet Communications Port(E)

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(E)

Supports port for ATM155 Mbits/sec network connection via twisted pair connections

Optional ATM 155 Mbits/sec Fiber Communications Port(E)

Supports port for ATM155 Mbits/sec network connection via fiber optic connections

Power Requirements

INPUT VOLTAGE

100-120 V ac or 200-240 V ac (auto-switching)

NOMINAL POWER

60 W

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

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

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 +70°C (–4 to +140°F)
RELATIVE HUMIDITY
5 to 95%, noncondensing
ALTITUDE
–300 to +12,000 m (–1,000 to +40,000 ft)

PHYSICAL SPECIFICATIONS

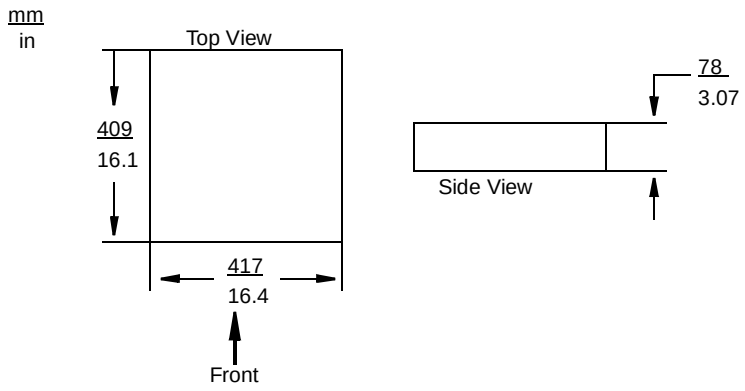
Mounting

I/A Series Industrial Enclosure or Modular Industrial Workstation Bay, table-top mounting, or 19-inch rack mounting (using Foxboro-designed modular mounting structure).

Mass (Maximum)

12.7 kg (27 lb)

DIMENSIONS—NOMINAL



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