FOXBORO®

PSS 21H-3B6 B4

I/A Series® Hardware
50 Series Application Processor
AP51, Style E

The Application Processor 51 (AP51), Style E is an application processor for use in the I/A Series system, which provides a higher performance level than the AP51, Style B processor.

The AP51, Style E performs one or more of the following functions in an I/A Series system:

- Execution of application functions, such as those relating to:
  - Production control
  - User applications
  - Diagnostics
  - Configuration
- Development and execution of applications functions (Foxboro and third party) 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.

In conjunction with one or more file storage devices (for example, disk drives or tape drives), AP51, Style E 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 high speed, ultra-wide Small Computer System Interface (SCSI-3)(1), designed into the AP51, Style E provides an industry-standard bus to support peripherals having SCSI-compatible controllers. Up to two externally connected hard disk drives can 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, Dual Nodebus 10Base-T Interface Module, or Dual Nodebus Interface Extender Module (refer to PSS 21H-7B2 B4).

As symbolized by the "**CE**" Logo marking on the processor, this processor conforms to the Applicable European Union Directives.

Optional PCI cards supplying IBM Token Ring, AUI Ethernet and twisted-pair Ethernet communications ports provide for connection to other networks such as DECnet or TCP/IP.(2)

The AP51, Style E contains the following elements:

- Processor logic
- Dynamic memory
- MII Connector (port provides AUI Ethernet interface when used in conjunction with MII-to-AUI Converter)
- Serial interface port (used as either printer or terminal port)
- Parallel interface for PostScript printer
- 3.5-inch 1.44 MB floppy disk drive
- Ultra-wide Small Computer System Interface (SCSI-3)
- Maximum of two internal hard drives(3) or external hard drives
  - Optional internal system disk(4): 4.2 GB or 9.1 GB
  - Optional internal expansion disk: 4.2 GB or 9.1 GB
  - Optional external system disk: 4.2 GB or 9.1 GB
  - Optional external expansion disk: 4.2 GB or 9.1 GB
- Up to two optional external hard drives for disk mirroring configuration: 4.2 GB or 9.1 GB(5)
- Optional internal and/or external 644 MB CD-ROM drives
- Optional internal and/or external 12.0 GB 4 mm digital tape drives
- Optional external 2.5 GB QIC tape drives
- Up to 3 Optional PCI Cards supported:
  - IBM Token Ring communications port
  - MII Connector plus 10/100 Mbps twisted-pair Interface. MII Ethernet communications port provides AUI Ethernet interface when used in conjunction with MII-to-AUI Adapter(6)
  - Ultra-wide SCSI plus 10/100 Mbps twisted-pair Interface Ethernet for disk mirroring and twisted-pair 10/100 Mbits/sec (slow/fast) Ethernet communications port
  - Serial Controller card with eight-port controller box
  - ATM 155 Mbits/sec network connection via twisted-pair communications port
  - ATM 155 Mbits/sec network connection via fiber cable communications port

(1) The maximum number of SCSI devices attached to the Application Processor, Style E is limited by the maximum allowable SCSI-3 equivalent cable length, which is 3 meters (10 feet). Up to two SCSI devices can be used externally with the workstation.
(2) 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.
(3) 4.2 GB and 9.1 GB hard drives are supported in I/A Series 4.2.x only by Model 51, Style D and E processors; in I/A Series 6.x, they are supported by all 50 Series processors.
(4) One system disk must be chosen.
(5) 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.
(6) This card and adapter can function as an interface to the Allen-Bradley Data Highway.

FUNCTIONAL SPECIFICATIONS

Devices Served
SCSI PERIPHERALS[a]
Up to two internal hard drives, and either an internal CD-ROM or tape drive; up to two external devices per SCSI port: hard disk drives[b], CD-ROM drives, tape drives, and/or QIC tape drives
NON-SCSI PERIPHERAL
1.44 MB 3.5-inch Floppy Drive[c]
SERIAL INTERFACE
Printer or Video Terminal
PARALLEL INTERFACE
PostScript Printer
Color PCL3 Printer

Processor Type
64-bit RISC Processor (250-300 MHz)

RAM Memory
64 MB (default), expandable to 2 GB

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. Run-time checks and Watchdog Timer function performed during operation.

Serial Interface Communications
TYPE
EIA RS-423 (RS-232-C compatible)
Maximum Distance (DNBI/DNBX)
450 m (1500 ft)
Maximum Distance (Printer)
15 m (50 ft)

Regulatory Compliance
EUROPEAN DIRECTIVES
89/336/EEC Electromagnetic Compatibility
73/23/EEC Low Voltage
93/465/EEC CE Marking

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)
Dual Nodebus 10Base-T Interface Module
100 m (300 ft)
Dual Nodebus Interface Extender Module
450 m (1500 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 Twisted-Pair 10/100 Mbps Ethernet Interface with MII Connector Card[e]
When used in conjunction with MII-to-AUI converter, this card supports an AUI port for 10 Mbits/sec Ethernet data bus. This card also contains 10 or 100 Mbits/sec (slow/fast) Ethernet twisted-pair data bus communications port.

Optional Twisted-Pair 10/100 Mbps Ethernet Interface Card with Ultra-wide SCSI Port[e]
This card supports both ultra-wide SCSI-3 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]
This card provides a port for ATM155 Mbits/sec network connection via twisted-pair connections.

Optional ATM 155 Mbits/sec Fiber Communications Port[e]
This card provides a port for ATM155 Mbits/sec network connection via fiber optic connections.

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

(a) Small Computer System Interface (ANSI standard ANSC X3T9.2).
(b) An external hard drive can be mirrored. An Application Processor, Style E can use either internal or external hard drives, not both.
(c) Floppy drive is mounted internally.
(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
10 to 40°C (50 to 104°F)
RELATIVE HUMIDITY
20 to 80%, wet bulb of 27°C (81°F)
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, metal enclosure, Modular Industrial Workstation (MIW), Modular Industrial Console (MIC), tabletop mounting, or 19-inch rack mounting (using Foxboro designed dual height modular mounting structure [2xMMS]).

Mass (Maximum)

17.63 kg (38.87 lb)

DIMENSIONS—NOMINAL

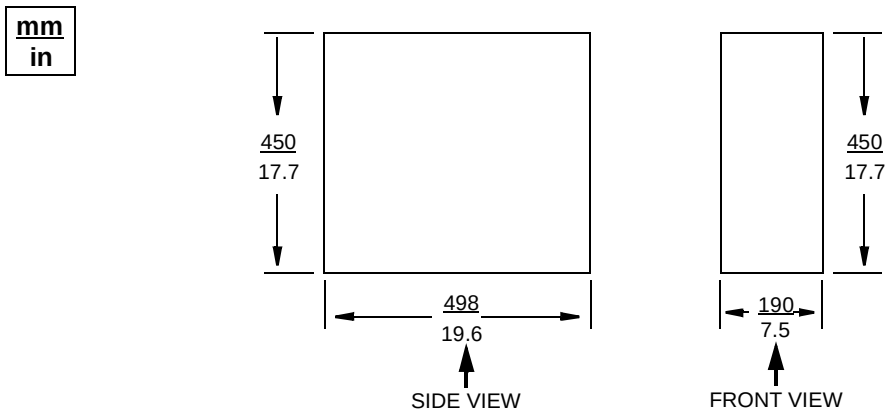

Figure 1. Application Processor, Style E Dimensions

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