

I/A Series® Hardware

50 Series Application Workstation Processor

AW51, Style E



The Application Workstation 51 (AW51), Style E processor in conjunction with its peripherals performs both application functions and workstation functions.

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 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.

Workstation functions performed by the AW51, Style E processor include:

- Generation of video signals to display graphic and textual display on a video monitor
- User interface devices including a touchscreen, mouse or trackball, alphanumeric keyboard, and up to two annunciator or annunciator/numeric keyboards.

A high speed, ultra-wide Small Computer System Interface (SCSI-3)⁽¹⁾, designed into the processor, provides an industry-standard bus to support peripherals having SCSI-compatible controllers. Hard disk drives connected to the SCSI bus can be configured mirrored (redundant) for maximum system security and data availability. Other SCSI devices that can be connected include a tape drive, RAID1 and RAID5 hard drives.

As symbolized by the attached **CE** logo, this processor conforms to the applicable European Union directives.

Electrical interfacing with the I/A Series Nodebus is effected via a Dual Nodebus 10BaseT Interface Module (DNBT) or Dual Nodebus Interface Extender Module (DNBX).

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

Electrical interfacing between the AW51, Style E with FoxBlock software and I/O devices is attained with⁽³⁾:

- A serial interface card for RS-232-C connectivity to Modicon Programmable Controllers or Allen-Bradley™ PLCs™
- An Ethernet card for connectivity to Allen-Bradley PLCs and Foxboro SCADA.

The AW51, Style E processor contains the following elements:

- Processor logic
- Dynamic memory
- MII Interface (This port provides AUI Ethernet interface when used in conjunction with MII-to-AUI Converter.)
- Pre-installed UPA Creator 3-D Graphics card for video interface

- Optional UPA Creator 3-D Graphics card for dual-head video interface
- Serial interface port (used as either printer or terminal port)
- Parallel interface for printer
- 3.5-inch 1.44 MB disk drive
- Ultra-wide SCSI-3
- Internal 644 MB CD-ROM drive
- Maximum of two internal hard drives or two external hard drives:
 - Internal system disk: 18.2 GB
 - Optional internal expansion disk: 18.2 GB
 - External system disk: 9.1 or 18.2 GB
 - Optional external expansion disk: 9.1 or 18.2 GB
- Optional external hard drives for disk mirroring configuration: 9.1 or 18.2 GB⁽⁴⁾
- Optional RAID1 external hard drives: 9.1 or 18 GB
- Optional RAID5 external hard drives: 72 or 90 GB
- Optional internal or external 12.0 GB 4 mm digital tape drives
- Optional external 25 to 65 GB AIT tape drive
- Up to 3 optional PCI cards⁽³⁾:
 - IBM Token Ring communications port
 - MII Interface plus 10/100 Mbps TP Interface; MII Ethernet communications port provides AUI Ethernet interface when used in conjunction with MII-to-AUI Converter⁽⁵⁾
 - Ultra-wide SCSI-3 (for disk mirroring) plus twisted-pair 10/100 Mbps Ethernet communications port
 - Serial interface card with eight (8) port controller box
 - ATM 155 Mbps network connection via twisted-pair communications port
 - ATM 155 Mbps network connection via fiber cable communications port

(1) The maximum number of SCSI devices attached to the Application Workstation, 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 information network connections to isolate I/A Series systems from other unrelated network traffic. Foxboro Information Technology and Application Consulting can provide information network planning and recommendations.

(3) The AW51, Style E has up to three optional PCI slots.

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

(5) This card and converter can function as an interface to the Allen-Bradley Data Highway.

FUNCTIONAL SPECIFICATIONS

Devices Served

SCSI PERIPHERALS(a)

Maximum of two internal hard drives and an internal CD-ROM; up to two external devices per SCSI port: hard disk drives(b), tape drives, and/or RAID drives

NON-SCSI PERIPHERALS

Internal 1.44 MB 3.5-inch diskette drive(c)

VIDEO INTERFACE

Color video monitor (up to two)

HI INTERFACES(d)

Alphanumeric keyboard, mouse or trackball, annunciator or annunciator/numeric keyboard (up to two per display), touchscreen (one per display), alarm printer, PostScript™ printer, color PCL3 printer

Processor Type

64-bit RISC Processor

RAM Memory

512 MB (default), expandable to 2 GB

Screen Presentation

REFRESH RATE

up to 76 frames/s

COLORS

32 for user displays, 8 for menu bar; selectable from a palette of over 16 million.

MARKER SETS

4 sets, up to 255 markers in each set: 2 (default) sets supplied by Foxboro; 2 can be created by user.

CHARACTER SETS

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

RESOLUTION (PIXELS)

1152 horizontal, 900 vertical (default)
up to 1280 horizontal, 1024 vertical
(Other resolutions are supported; however, the resolutions listed above are used with the AW51E.)

(a) Small Computer System Interface (ANSI standard ANSC X3T9.2).

(b) External hard drives can be mirrored. An Application Workstation, Style E can use either internal or external system hard drives, not both.

(c) Disk drive is mounted internally.

(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.

(e) Refer to PSS 21H-7B2 B4, Dual Nodebus Interface, Dual Nodebus 10BaseT Interface, and Dual Nodebus Interface Extender, for information on how the control bus is used.

Video Output

TYPE

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

Maximum Cable Length

30 m (100 ft)

Nodebus Interface Communications

TYPE

IEEE 802.3 data bus and EIA RS-423 control bus(e)

Maximum Distance From Nodebus Using Dual Nodebus 10BaseT Interface Module

100 m (300 ft)

Maximum Distance From Nodebus Using Dual Nodebus Interface Extender Module

450 m (1500 ft)

Ethernet Interface Communications

TYPE

AUI Cable (used with MII-to-AUI Adapter) and RG-58 Coaxial Cable (ThinNet/10Base2) or ThickNet (10Base5)

Maximum Distance of AUI Cable

50 m (150 ft)

TYPE

Coax Cable

Maximum Distance

10BaseT

100 m (300 ft)

10Base2

150 m (500 ft)

10Base5

450 m (1500 ft)

FUNCTIONAL SPECIFICATIONS (Cont.)

Serial Interface Communications

TYPE

EIA RS-423 (RS-232-C compatible)

Maximum Distance (DNBX)

450 m (1500 ft)

Maximum Distance (Printer)

15 m (50 ft)

Maximum Distance (GCIO)

30 m (100 ft)

Parallel Interface Communications

Centronics parallel interface for color PostScript printer

Error Detection

COMMUNICATION ERRORS

Cyclic redundancy codes (CRC) and checksum codes

MEMORY ERRORS

Error checking and correcting (ECC)

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.

Optional IBM Token Ring Communications Card(f)

Supports port for IBM Token Ring data bus

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

Optional Twisted-Pair 10/100 Mbps Ethernet Interface with MII Connector Card(f)

When used in conjunction with MII-to-AUI Converter, supports AUI port for 10 Mbps Ethernet data bus. Also contains 10 or 100 Mbps Ethernet twisted-pair data bus communications port

Optional ATM 155 Mbps Twisted-Pair Communications Port(f)

This card provides a port for ATM155 Mbps network connection via twisted-pair cables.

Optional ATM 155 Mbps Fiber Communications Port(f)

This card provides a port for ATM155 Mbps network connection via fiber optic connections.

Optional Twisted-Pair 10/100 Mbps Ethernet Interface Card with Ultra-wide SCSI Port(f)

This card supports both ultra-wide SCSI-3 used for support of disk mirroring and 10 or 100 Mbps Ethernet twisted-pair data bus communications port.

Power Requirements (Processor Only)

INPUT VOLTAGE

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

CONSUMPTION

120 W

Regulatory Compliance

EUROPEAN DIRECTIVES

89/336/EEC Electromagnetic Compatibility

73/23/EEC Low Voltage

93/465/EEC CE Marking

ENVIRONMENTAL SPECIFICATIONS

Operating

TEMPERATURE

5 to 40°C (41 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 +60°C (–40 to +140°F)

RELATIVE HUMIDITY

5 to 95%, noncondensing

ALTITUDE

–300 to +12,000 m (–1,000 to +40,000 ft)

PHYSICAL SPECIFICATIONS

Mounting

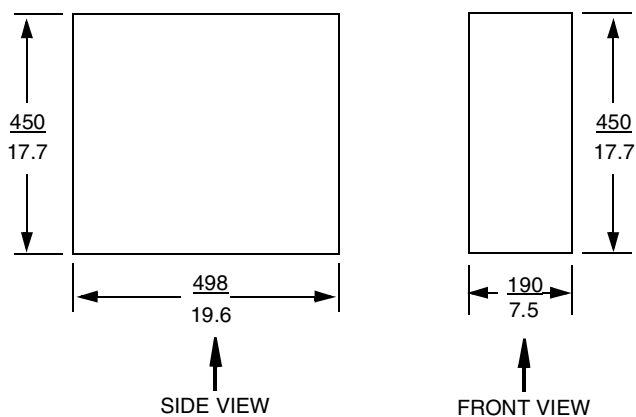
I/A Series Industrial Enclosure, Metal Enclosure, Modular Industrial Workstation (MIW), Modular Industrial Console (MIC), tabletop mounting, or 19-inch rack mounting (using Foxboro designed dual height modular mounting structure [2xMMS]).

Mass (Maximum)

17.63 kg (38.87 lb)

DIMENSIONS—NOMINAL

mm
in



The Foxboro Company

33 Commercial Street
Foxboro, Massachusetts 02035-2099

United States of America

<http://www.foxboro.com>

Inside U.S.: 1-508-543-8750 or 1-888-FOXBORO (1-888-369-2676)

Outside U.S.: Contact your local Foxboro representative.

Fox, Foxboro, and I/A Series are trademarks of The Foxboro Company.

Invensys is a trademark of Invensys plc.

PostScript is a trademark of Hewlett-Packard Company.

Allen-Bradley, Data Highway and PLC are trademarks of Allen-Bradley Company.

All other brand names may be trademarks of their respective companies.

Copyright 1997-2000 The Foxboro Company

All rights reserved