I/A Series® Hardware
50 Series Workstation Processor
WP51, Style E

The Workstation Processor 51 (WP51), Style E, together with its connected peripheral devices, provides a link between the user and all system functions. The WP51, Style E provides a higher performance level than the WP51, Style B processor.

The WP51 receives graphic and textual information from application processors and other system stations and displays the information on a video monitor. In addition to the video monitor, devices connected to the WP51, Style E can include:

- a touchscreen (for 20-inch monitor only)
- a mouse, trackball, or industrial pointing device
- an alphanumeric keyboard, and
- up to two annunciator or annunciator/numeric keyboards (per monitor with total of four per dual monitor configuration) via a GCIO interface

These optional devices provide a means for command and data entry, display option selection,

and alarm management. The WP has a high speed, ultra-wide Small Computer System Interface (SCSI-3), designed into the processor, providing an industry-standard bus to support peripherals having SCSI-compatible controllers, such as CD-ROM, tape, and hard disk drives.

The WP51, Style E is fully compatible with existing display applications software. It takes advantage of 64-bit main processor technology for maximum display performance and applications expandability.

The WP51, Style E can be mounted on a tabletop, in I/A Series metal enclosures, hardened enclosures, Industrial Enclosure 32, Modular Industrial Workstations (MIWs), or Modular Industrial Consoles (MICs), and 19-inch rack-mount equipment utilizing the Foxboro designed dual height modular mounting structure (2xMMS).

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Product Specifications

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

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).

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.[1]

The Workstation Processor 51, 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)
- Pre-installed UPA Creator Graphics card for video interface
- Serial interface port (used as either printer or terminal port)

- Parallel interface port
- 3.5-inch 1.44 MB floppy disk drive
- Ultra-wide Small Computer System Interface (SCSI-3)[2]
- Maximum of two internal disk(s): 4.2 GB[3]
- One optional internal or two optional external: 644 MB CD-ROM drive, -or- 12.0 GB 4 mm digital tape drive
- Optional external 2.5 GB QIC tape drive
- 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 Converter
  – Ultra-Wide SCSI-3 plus twisted-pair 10/100 Mbits/sec (slow/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
- Optional additional UPA Creator Graphics Card for dual head video interface

FUNCTIONAL SPECIFICATIONS

Devices Served
 SCSI PERIPHERALS(a,b)
  Maximum of two internal or external hard drives; one internal or external CD-ROM drive, tape drive, or QIC tape drive
 NON-SCSI PERIPHERALS
  1.44 MB 3.5-inch Floppy Drive(c)
 HI INTERFACE
  Color Video Monitor (up to two)
 SERIAL INTERFACES(c)
  One Alphanumeric Keyboard
  Annunciator or Annunciator/Numeric Keyboard (up to two per monitor)
  Touchscreen (one per 20-inch monitor)
  Mouse, Trackball, or Industrial Pointing Device
  PostScript Printer

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

Program Memory
 128 MB (default), expandable to 1 GB

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 (default) I/A Series sets supplied by Foxboro; additional non Foxboro sets also supplied
 RESOLUTION (PIXELS)
  1280 horizontal, 1024 vertical

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

(b) Floppy drive is mounted internally.

(c) One serial interface communication port provides for peripheral communications: a group of serially connected input/output devices
  – optional touchscreen and up to two annunciator or annunciator/numeric keyboards.

(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 maximum number of SCSI devices attached to the Workstation 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.

(3) In I/A Series 4.2.x, only Model 51, Style D and E processors support the 4.2 GB drive; all 50 Series processors support it in I/A Series 6.x.

FUNCTIONAL SPECIFICATIONS

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)
Dual Nodebus 10Base-T Interface Module
100 m (300 ft)
Dual Nodebus Interface Extender Module
450 m (1500 ft)

Ethernet Interface Communications
TYPE
AUI Cable (used with MII-to-AUI Adapter)
Maximum Distance
50 m (150 ft)

TYPE
AUI Cable (used with MII-to-AUI Adapter) and RG-58 Coaxial Cable (ThinNet/10Base 2) or ThickNet/10Base 5)
Maximum Distance of AUI Cable
50 m (150 ft)

Maximum Distance of Coaxial Cable
10Base 2
150 m (500 ft)
10Base 5
450 m (1500 ft)

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)

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

Parallel Interface Communications
Centronics Parallel Interface for Color PostScript Printer

Internal Diagnostics
Self-checking performed at power-up. Run-time checks and Watchdog Timer function performed during operation.

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

Optional IBM Token Ring Communications Card(d)
Supports port for IBM Token Ring data bus

Optional Twisted-Pair 10/100 Mbps Ethernet Interface with MII Connector Card(d)
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(d)
This card supports both ultra-wide SCSI-3 used for support of 10 or 100 Mbits/sec (slow/fast) Ethernet twisted-pair data bus communications port.

Optional ATM 155 Mbits/sec Twisted-Pair Ethernet Communications Port(d)
This card provides a port for ATM155 Mbits/sec network connection via twisted-pair connections.

Optional ATM 155 Mbits/sec Fiber Communications Port(d)
This card provides a port for ATM155 Mbits/sec network connection via fiber optic connections.

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

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

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 +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

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)
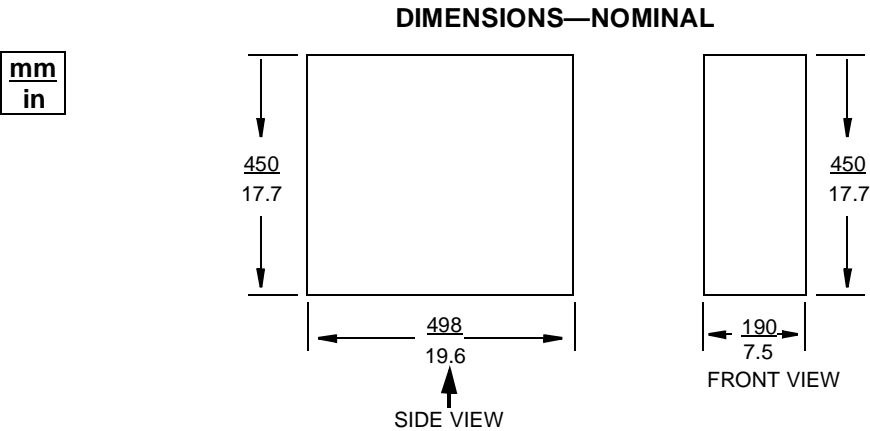   17.63 kg (38.87 lb)

DIMENSIONS—NOMINAL

Figure 1. Workstation Processor, Style E Dimensions

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