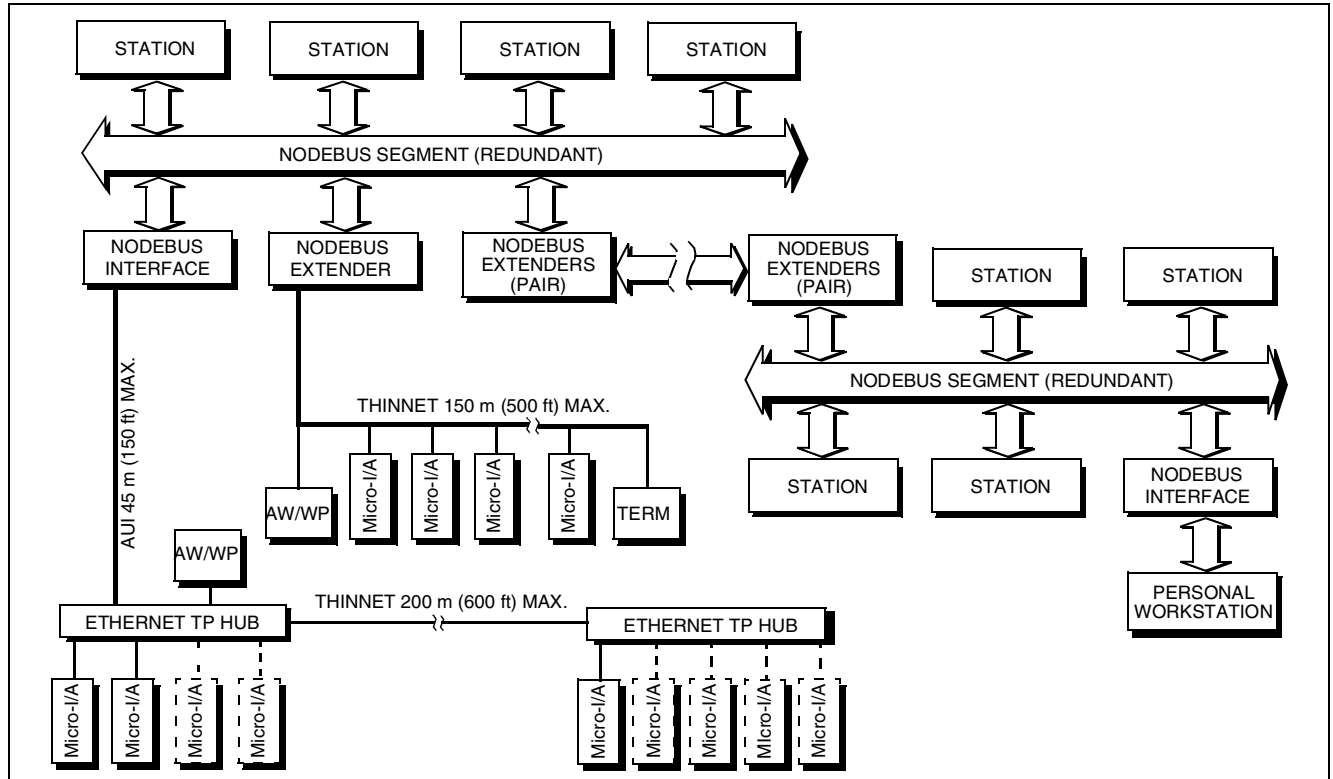


I/A Series® Hardware

Nodebus, Nodebus Extender, and Nodebus Interface



The Nodebus interconnects stations (Control Processors, Application Processors, Workstation Processors, Application Workstations, and so forth) in the I/A Series system, to form a process management and control node. Operating in conjunction with the Nodebus interface electronics in each station, the Nodebus provides high-speed, redundant, peer-to-peer communications between the stations.

Nodebus Extenders, used in pairs, provide for extension of the Nodebus, as illustrated above.

The Nodebus Interface connects an I/A Series personal workstation (with appropriate connector card and software) to the Nodebus, allowing the workstation to operate as a station on the I/A Series system. The Nodebus Interface also allows connection of an Application Workstation or Workstation Processor hosting Micro-I/A™ stations (via an Ethernet star or Ethernet daisy chain configuration) to the Nodebus. See PSS 21H-7B1 B3 Nodebus for additional information.

NODEBUS FUNCTIONAL SPECIFICATIONS

Bus Type Redundant IEEE 802.3 bus with CSMA/CD access protocol	Maximum Number of Mounting Structure Buses per Segment^(c) 6
Data Transfer Rate Clocked at 10 megabits/s	Maximum Nodebus Segment Length^(e) 30 m (100 ft)
Characteristic Impedance 50 ohms	Maximum Cabling Length Between Segments 300 m (1,000 ft) or 2,000 m (6,560 ft) with FONBE point-to-point configuration ^(f,9)
Nodebus Segment Termination 50 ohm terminators, one at each end	Maximum Overall Cable Length in a Node 600 m (2,300 ft) or 2,060 m (6,758 ft) with FONBE point-to-point configuration ^(f,9)
Maximum Number of Modules Connected in a Segment^(a,b,c) 32	Configuration Limitations Not more than three Nodebus segments (four Nodebus Extender pairs) can be implemented in a single node. ^(d, 9)
Maximum Number of Stations Connected in an Extended Node^(a,b) 64	
Maximum Number of Segments in a Node^(d) 3	

(a) Fault-tolerant stations count as two modules.
(b) A Nodebus Extender pair counts as two modules.
(c) For example, an Industrial Enclosure 32 has two mounting structures; therefore, no more than three Industrial Enclosure 32s can be included in a segment.
(d) If Dual Nodebus Interface Extenders (DNBXs) are used in the node, two Nodebus segments (maximum) can be implemented.
(e) This does not include mounting structure bus lengths.
(f) Control Processor 10 is limited to 697 m (2,300 ft) Nodebus lengths.
(g) FONBE is limited to a two segment Nodebus with a single fiber extension at a maximum length of 2,000 m (6,560 ft) or 3 segments with the total sum of fiber lengths at a maximum of 2000 m (6,560 ft).

NODEBUS EXTENDERS AND NODEBUS INTERFACE FUNCTIONAL SPECIFICATIONS

Power Requirements INPUT VOLTAGE (REDUNDANT) 26 to 42 V dc (39 V dc typical) CONSUMPTION (HEAT DISSIPATION) <i>Nodebus Extender</i> 14 W, maximum <i>Nodebus Interface</i> 8 W, maximum	Nodebus Interface Cabling Distance Maximum cabling (AUI) distance between Nodebus Interface and workstation is 45 m (150 ft). Maximum cabling distance between Nodebus Interface and Ethernet hub configuration is 45 m (150 ft). Maximum cabling (ThinNet) distance between Nodebus Interface Extender and end of daisy chain configuration is 150 m (500 ft).
Maximum Number of Nodebus Interfaces Allowed in a Single Node 4	Communication Characteristics The Nodebus Interface is non-redundant.

NODEBUS EXTENDER AND NODEBUS INTERFACE ENVIRONMENTAL SPECIFICATIONS^(a)**Operating****TEMPERATURE**

0 to 60°C (32 to 140°F)

RELATIVE HUMIDITY

5 to 95% (Noncondensing)

ALTITUDE

–300 to +3,000 m (–1,000 to +10,000 ft)

Storage**TEMPERATURE**

–40 to +70°C (–40 to +158°F)

RELATIVE HUMIDITY

5 to 95% (Noncondensing)

ALTITUDE

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

Environmental Contamination Level

Class G3 (Harsh) as defined in ISA Standard S71.04

(a) The environmental ranges can be extended by the type of enclosure containing the Nodebus Extender or interface. [Refer to applicable Product Specification Sheet (PSS) which describes the specific enclosure that is to be used.]

NODEBUS EXTENDERS AND NODEBUS INTERFACE PHYSICAL SPECIFICATIONS**Configuration^(a)**

Single-width Z-Module

Mass (Maximum)

1.0 kg (2.2 lb)

Mounting

May be placed in any mounting structure slot.

(a) Nodebus Extenders are used in pairs (two single-width Nodebus Extender modules at each end of the extension cable).

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