T9110 Processor Module Specification

Table 23 - Processor Module Specification

Attribute	Value
Functional Characteristics	
Degradation	1oo1D, 1oo2D and 2oo3D[1]
Processor clock	400 MHz
Memory	
Boot flash	512 kB
SRAM	512 kB
Bulk flash	64 MB
SDRAM	32 MB
Sequence of events	(for internal variables)
Event resolution	1 ms
Time-stamp accuracy	Application Scan
Self Test Interval	< 5.5 hours
Performance Characteristics	
Safety Integrity Level (SIL)	1 processor: non-safety applications up to SIL 1 2 Processors: up to SIL 3 safety applications 3 Processors: up to SIL 3 fault tolerant and TMR safety applications
I/O Modules supported	48
Electrical Characteristics	
Module supply voltage	
Voltage	Redundant + 24 Vdc nominal; 18-32 Vdc range
Module supply power dissipation	8 W (27.3 BTU/h)
Typical Surface Temperature of an Operating Module	43 °C ± 5 °C
Mechanical Specification	
Dimensions (height × width × depth)	166 mm × 42 mm × 118 mm (6-½ in. × 1-5/8 in. × 4-5/8 in.)
Weight	430 g (15 oz.)
Casing	Plastic, non-flammable

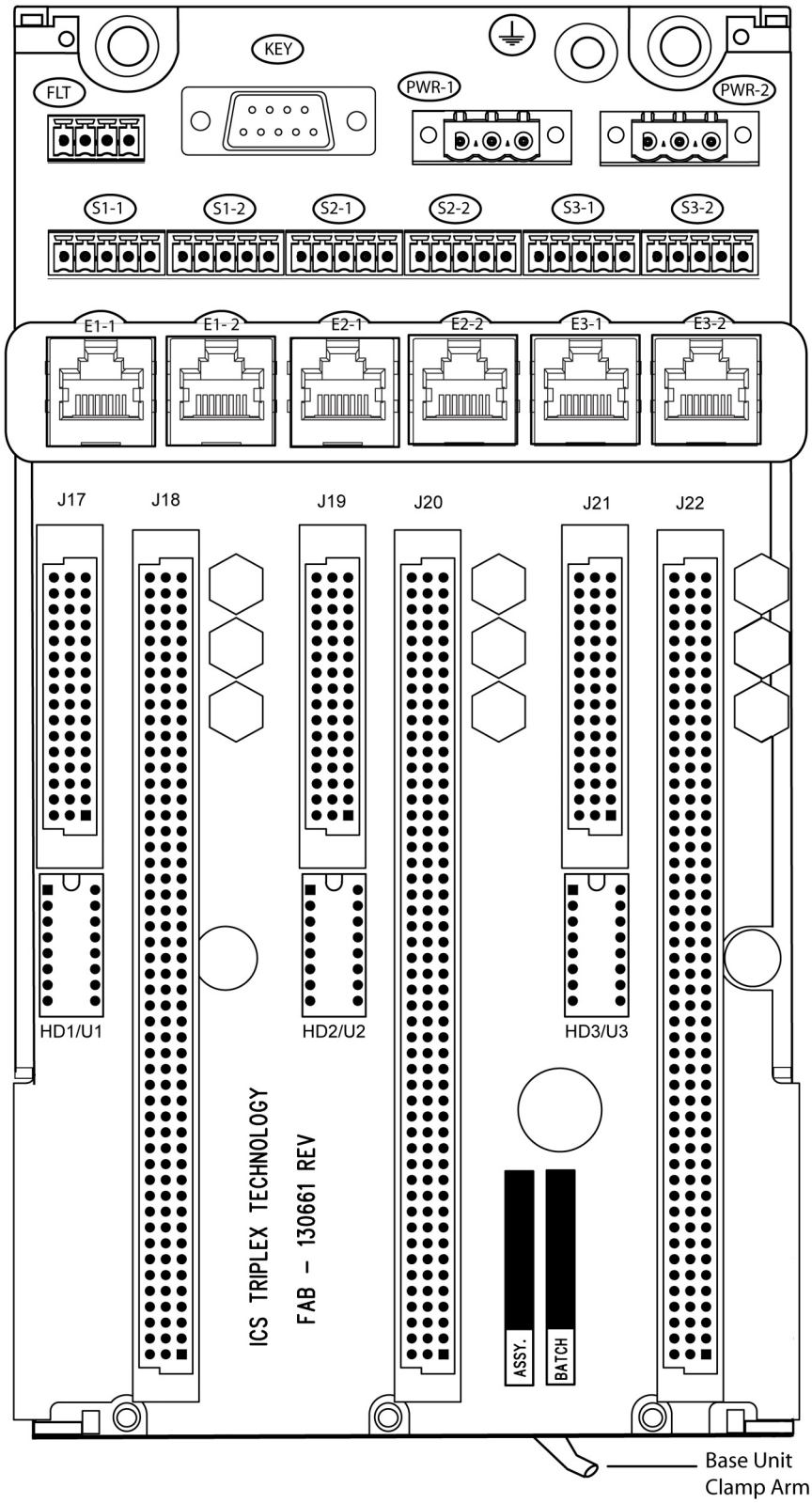
(1) When a controller's processor modules have degraded to 1oo1D, the system must be restored to at least 1oo2D by replacing the faulty processor module(s) within the MTTR assumed in the PFD calculations; also, unless compensating measures are defined in the Safety Requirements Specification (SRS) and documented in operating procedures, the application program must be designed to shut down safety instrumented functions if a module failure due to dangerous fault has not been replaced within the MTTR.

T9100 Processor Base Unit

Processor base unit supports up to three processor modules as a redundant group. The processor base unit supplies the electrical connections between the T9110 processor modules, and for the remaining controller modules. Each base unit can be mounted onto standard DIN rails or directly onto a panel or wall. The moldings use slots and clamps for DIN rail mountings, and holes for screw fixing to flat panels.

The processor base unit holds the IP address of each processor module separately in a BUSP component that is installed during manufacture. This allows you to remove a faulty processor module and install a new one without needing to set up the IP address of the replacement module.

Figure 27 - Processor base unit



T9100 Base Unit Specification

Table 24 - T9100 Processor Base Unit Specification

Attribute	Value
Electrical Specification	
Supply voltage requirements	Redundant + 24 Vdc nominal; 18 Vdc to 32 Vdc range
Number of processor modules supported	1, 2 or 3
Number of I/O base units supported	16: 8 for each I/O bus
E1-1, E1-2; E2-1, E2-2; E3-1, E3-2	Connectors for Ethernet Ports 1 & 2 for Processor A, B and C Wiring: shielded RJ45 sockets according to IEC6063-7, 2- or 4-pair shielding
S1-1, S1-2; S2-1,S2-2; S3-1, S3-2	Connectors for Serial Ports 1 & 2 for Processor A, B and C Wiring: Six 5-way connectors; maximum 1.31 mm^2 (16 AWG), Stripping length 7 mm (9/32 in.)
PWR-1, PWR-2	Connectors for Redundant +24Vdc Power Supplies. Wiring: Two 3-way connectors, Conductor cross section maximum 3.3 mm^2 (12 AWG); Stripping length 7 mm (9/32 in.)
FLT	Not used
KEY	Connector for the Program Enable Key
Mechanical Specification	
Dimensions (height × width × depth)	235 mm x 126 mm (9 1/4 in. x 5 in.)
Weight	460g (16 oz.)

T9300 I/O Base Unit (3 way)

The AADvance controller has T9300 I/O base units for the I/O modules. An I/O base unit supports a maximum of three I/O modules (of any type), and their related termination assemblies. Each base unit can be mounted onto standard DIN rails or directly onto a panel or wall. The moldings use slots and clamps for DIN rail mountings, and holes for screw fixing.

It contains a passive backplane that supplies the electrical connections between the I/O modules and the T9100 processor base unit; i.e. the command and response buses and the system power.