SPECIFICATION

INTRODUCTION

Instrument Description

The TM 515 is a five-wide power module compatible with most TM 500 plug-ins. It provides unregulated ac and dc supplies and nondedicated power transistors for use by the plug-ins. This mainframe does not have a high-power compartment but does feature forced-air cooling. Available options allow the rear interface to be customized (Option 5), operation from power sources with a line frequency of up to 400 Hz (Option 6), and specific interconnections for specialized plug-ins (Option 7).

Performance Conditions

The values listed below are valid only when the instrument is operated at an ambient temperature between 0° C and +50° C.

ELECTRICAL CHARACTERISTICS

Table 1-1

SUPPLIES

Characteristics	Performance Requirements	Supplemental Information
+33.5 Vdc		
Tolerance[a]		+23.7 V to +40.0 V
PARD (Periodic and Random Deviation)		≤2.5 VPP
Maximum load		350 mA
Maximum load di/dt		10 mA/μs
−33.5 Vdc		
Tolerance[a]		−23.7 V to −40.0 V
PARD		≤2.5 VPP
Maximum load		350 mA
Maximum load di/dt		10 mA/μs
+11.5 Vdc		
Tolerance[a]		+7.6 V to +16.0 V
PARD		≤2.5 VPP
Maximum load		1.3 A
Maximum load di/dt		20 mA/μs
25 Vac (2 each)		
Range		25.0 Vrms +10%; −15%
Maximum load		25 VA
Maximum floating V		350 V_{peak}

Table 1-1 (cont)

Characteristics	Performance Requirements	Supplemental Information
17.5 Vac		
Range		20.5 Vrms +10%; −20% grounded center tap
Maximum load		30 VA
Maximum Plug-in Power draw from mainframe[b]		35 Wdc or 75 VAac
Combined Power Draw sharing limitation[b]		VAac + 2.1 Wdc ≤75
Fuse Data		
+33.5 Vdc		2.5 A, 3 AG, fast blow
−33.5 Vdc		2.5 A, 3 AG, fast blow
+11.5 Vdc		7.5 A, 3 AG, fast blow

[a] Worst case; low line-full load and high line-no load values including PARD.

[b] At nominal line voltage.

Table 1-2

SERIES PASS TRANSISTORS

Characteristics	Performance Requirements	Supplemental Information
Type		One each NPN and PNP per compartment.
Maximum dissipation		7.5 W each, 15 W total.

Table 1-3

SOURCE POWER REQUIREMENTS

Characteristics	Performance Requirements	Supplemental Information
Voltage ranges		Selectable 100 V, 110 V, 120 V, 200 V, 220 V, and 240 V nominal line, ±10%.
Line frequency		48 Hz to 60 Hz
Option 6		48 Hz to 400 Hz
Maximum power consumption		240 W
Fuse data		
100 V, 110 V, 120 V ranges		3A, 3 AG, slow blow
200 V, 220 V, 240 V ranges		3A, 3 AG, slow blow

Table 1-4

MISCELLANEOUS

Characteristics	Performance Requirements	Supplemental Information
Maximum recommended plug-in power dissipation		
One-wide		10 to 15 W
Two-wide		25 to 35 W

PHYSICAL CHARACTERISTICS

Table 1-5

ENVIRONMENTAL[1]

Characteristics	Information
Overall	Meets or exceeds MIL-T-28800B, class 5 requirements with exception for EMC.
Temperature	
Operating	0°C to 50°C
Non-operating	−55°C to +75°C
Humidity	90 to 95% R.H. for five days cycled to +50°C
Altitude	
Operating	4.6 km (15,000 ft.)
Non-operating	15 km (50,000 ft.)
Vibration	0.38 mm (0.015 in.), 10 Hz to 55 Hz, 75 minutes
Shock	30 g. (1/2 sine), 11 ms, 18 shocks
Bench handling	45°, 4 in., or equilibrium, whichever occurs first
Transportation	Qualified under National Safe Transit Association Preshipment Test Procedures 1A-B-1 and 1A-B-2.

[1] With plug-ins; some plug-ins require additional limitations.

Table 1-6

MECHANICAL

Characteristics	Information
Net weight	10.2 kg (22.5 lbs)
Overall dimensions	Height—17.3 cm (6.8 in.)
	Width—38.1 cm (15.0 in.)
	Length—50.8 cm (20.0 in.)