TM500 Series plug-in interface

Tektronix TM500 mainframes provide power supplies and signal connections for TM500 plug-ins.

Mechanically, the interface is a direct card-edge connector with 28 contacts on either side, at 5/32" (~0.156" or 3.96 mm) spacing. The connector can be keyed in several places, the plug-in boards have matching cuts between contacts (see below).

Looking into the mainframe from the front panel, "A" pins are left of the connector centerline (on the plug-in PCB's component side) and "B" are on the right (on the plug-in PCB's solder side). Pins are numbered from 1 at the bottom to 28 on the top.

The mainframe provides supplies shared by all slots: 17.5 V_{AC}, +11.5 V (regulated from the 17.5 V_{AC} supply), +33.5 V, and −33.5 V. In addition, there are two dedicated, 25 V_{AC}, 0.5 A transformer windings per slot, floating up to 350 V_{peak} with reference to the common ground..

In mainframes that have a "high-power compartment", that slot has a separate 17.5 V_{AC} and 11.5 V_{DC} section providing 4 A shared between them, and that slot's 25 V windings are rated 1 A each.

For each slot, two uncommitted transistors (one NPN and one PNP) are heatsink-mounted in the mainframe. These are available for the module's power regulation circuits and are rated to dissipate 7.5 W each.

The signal pin connections depend on the individual modules. For details, please see the TM 500 Rear Interface Data Book.

Pin	B side Function	A side Function
28..14	Signals	Signals
13	25 V_{AC} winding #1	25 V_{AC} winding #1
12	+33.5 V filtered DC	+33.5 V filtered DC
11	Collector lead of PNP series pass	Base lead of PNP series pass
10	Transformer shield lead	Emitter lead of PNP series pass
9	±33.5 V common return	±33.5 V common return
8	−33.5 V filtered DC	−33.5 V filtered DC
7	Collector lead of NPN series pass	Emitter lead of NPN series pass
6	No connection	Base lead of NPN series pass
5	17.5 V_{AC} winding	17.5 V_{AC} winding
4	+11.5 V common return	+11.5 V common return
3	+11.5 V common return	+11.5 V common return
2	+11.5 V filtered DC	+11.5 V filtered DC
1	25 V_{AC} winding #2	25 V_{AC} winding #2

Interface connections viewed from rear of power module. Pins 14 through 28 are used for signal connections.

Pin group function legend

DC power and ground
AC power
Signals
Uncommitted transistors

Connector keys

- between pins 6 and 7 − TM500 standard
- between pins 19 and 20 − power supply family modules (PS501, PS503, PS505, ...)
- between pins 21 and 22 − measurement family modules (DC501, DC502, DC503, DC504, DC505, MR501, ...)
- between pins 23 and 24 − signal source family modules (AF501, AM501, AM502, FG501, FG502, FG503, PG501, PG502, PG505, PG506, PG508, RG501, TG501, SC501, SG502, SG503, ...)
- between pins 25 and 26 − SC502 family
- ...

Power ratings

Mainframe	Standard slots			High-power slot		
TM501	+11.5 V	17 V_{AC}	2×25 V_{AC}			
	1.0 A shared		2×0.5 A			
	±33.5 V 0.5 A shared					
TM502	+11.5 V	17 V_{AC}	2×25 V_{AC}			
	60 VA shared		2×0.5 A			
	±33.5 V 0.7 A shared					
TM503	+11.5 V	17 V_{AC}	2×25 V_{AC}			
	3.9 A or 90 VA shared		2×0.5 A			
	±33.5 V 0.7 A shared					
TM504	+11.5 V	17 V_{AC}	2×25 V_{AC}	+11.5 V	17 V_{AC}	2×25 V_{AC}
	3.6 A shared		2×0.5 A	3.6 A shared		2×1 A
	±33.5 V 1.4 A shared					
TM506	+11.5 V	17 V_{AC}	2×25 V_{AC}	+11.5 V	17 V_{AC}	2×25 V_{AC}
	5.2 A shared		2×0.5 A	4 A shared		2×1.2 A
	±33.5 V 1.75 A shared					
TM515	+11.5 V	17 V_{AC}	2×25 V_{AC}			
	6.5 A or 150 VA shared		2×0.5 A			
	±33.5 V 1.75 A shared					

See also

- TM5000 Series plug-in interface
- Tektronix TM 500 Series Rear Interface Data Book (PDF)
- Tektronix TM 500 Series Rear Interface Data Book (OCR, PDF) (http://w140.com/smb/TM5X_RIB_F REE.pdf)

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