

MBT MODEL TABLE

MODEL	OUTPUT VOLTAGE Volts	OUTPUT CURRENT Amperes	CONTROL See footnote
MBT 6-32MG	0-6	0-32	SBC
MBT 6-32M	0-6	0-32	
MBT 15-20MG	0-15	0-20	SBC
MBT 15-20M	0-15	0-20	
MBT 25-14MG	0-25	0-14	SBC
MBT 25-14M	0-25	0-14	
MBT 36-10MG	0-36	0-10	SBC
MBT 36-10M	0-36	0-10	
MBT 55-7MG	0-55	0-7	SBC
MBT 55-7M	0-55	0-7	
MBT 75-5MG	0-75	0-5	SBC
MBT 75-5M	0-75	0-5	
MBT 100-3.6MG	0-100	0-3.6	SBC
MBT 100-3.6M	0-100	0-3.6	
MBT 150-2.4MG	0-150	0-2.4	SBC
MBT 150-2.4M	0-150	0-2.4	

An SBC (Single Board Computer) is included in models with suffix 'G'. The SBC enables the RS 232 and GPIB (IEEE 488.2) communications buses and permits an MBT to function as a 'master' to drive other power supplies. Models without 'G' (no SBC), have full local function and can receive instructions and readback data via their native serial bus. They do not have IEEE 488.2 or RS 232 communications ports and cannot function as a master.

To include the Output Enable and Polarity Reversal relays, add a suffix 'R' to the model number.

MBT INPUT CHARACTERISTICS

SPECIFICATION	RATING/DESCRIPTION	CONDITION
a-c Voltage selectable	115/230V a-c single phase	Nominal
	105-125 and 210-250V a-c	Range
Frequency	50/60Hz	Nominal
	47-63Hz	Range
Current at maximum load	7.5A rms maximum	115V a-c input
	3.7A rms maximum	230V a-c input

MBT OUTPUT CHARACTERISTICS

SPECIFICATION	RATING/DESCRIPTION	CONDITION
d-c Output	Low-noise linear series regulator type	
Type of stabilizer	Automatic crossover	Voltage/current stabilizer
Voltage	0 to 100% of rating	Adjustment range
Current	0 to 100% of rating	Temperature 0-50°C
Error sense	0.5V	Voltage allowance per wire
Isolation voltage	500V d-c or peak	Output to ground
Leakage current Output to ground	<5 microamperes	rms at 115V a-c
	<50 microamperes	p-p at 115V a-c
Series connection	500V	Max voltage off ground
Parallel connection	Redundancy	Use current mode limiting and external steering diodes (1)
Overtension protection	Tracks output setting. Crowbars output and trips circuit breaker	
Overcurrent protection		
Overtemperature	Provides isolated flag. Crowbars output and trips circuit breaker	Thermostat monitors heat sink temperature
Power loss	Disables output trips circuit breaker(2)	Automatic detection of a-c loss

(1) Proper heatsinking of steering diodes required. When an MBT goes into current mode, an "overload" error message will be produced. If operating in parallel, the control system must be programmed to ignore this message.

(2) Circuit breaker auto trip can be disabled.

MBT GENERAL SPECIFICATIONS

SPECIFICATION	RATING/DESCRIPTION	CONDITION
Temperature	0°C to +50°C, derate 10% at 60°C	Operating
	-40° to +85°C	Storage
Humidity	0 to 95% RH	Non-condensing operating & storage
Altitude	Sea level to 10,000 ft	Operating

MBT CONTROL CHARACTERISTICS

SPECIFICATION	RATING/DESCRIPTION	CONDITION
Keypad control (voltage, current protection, menu)	24 keys, some have two functions, direct entry	12 bit resolution
Slew control (voltage or current)	Up and down increment control	One pair of keys
Knob control (voltage and current)	Multi-turn optical encoders rotary controls, 128 counts/turn	Two control knobs
Display, front panel (voltage, current, status, menu)	2x16 character alphanumeric LCD with LED backlight	
Status indicators	Voltage mode	LEDs
	Current mode	
	Polarity reversed	
	Remote	
	Output enabled	
Remote talk-listen bus communications: MBT-G models can be host or slave. Up to 27 units freely intermixed with MAT, MST and BOP-TMA power supplies.	(Two-wire serial bus)	All models
	IEEE 488.2 (GPIB)	Suffix "G" models
	RS 232 serial bus	Suffix "G" models Models with suffix "G" can function as a master or controller
Output enable	Operate from panel keypad or remote bus	Optional relays (internal) Specify suffix "R"
Polarity reverse		

MBT STATIC SPECIFICATIONS

INFLUENCE QUANTITY		OUTPUT EFFECTS VOLTAGE MODE	OUTPUT EFFECTS CURRENT MODE
Source Effect		0.001% E_o max	0.005% I_o max
Load Effect 10% to 100% load		0.002% E_o max	3mA
Temperature Effect	Per deg C (0 to 50°C)	0.01% E_o max	0.02% I_o max
Time Effect (drift)	0.5-8.5 hours	0.01% E_o max	0.02% I_o max
Programming Resolution	12 bits	0.024% E_o max	0.024% I_o max
Programming Accuracy		0.024% E_o max	0.1% I_o max
Data Read Back Accuracy		0.1% E_o max	0.15% I_o max
Ripple and Noise	rms	0.001% E_{max} or 0.3mV (1)	0.03% I_o max
	20 Hz-10MHz p-p	0.01% E_{max} or 3mV (1)	0.3% I_o max

(1) Whichever is greater.

MBT PHYSICAL CHARACTERISTICS

SPECIFICATION	RATING/DESCRIPTION	CONDITION
Input connection	Detachable IEC type, 3-wire	
Output connections	Rear binding posts	
IEEE 488.2 port (GPIB)	Rear 24 pin	
RS 232 serial port	Rear 9 pin	
Serial port	Rear 9 pin	Two ports, in/out
a-c input select	Switch	
Error sense	Rear barrier strip	
Type of construction	Enclosed, bench style housing with bail and handle	
Rack mounting	Two abreast	Use RA 37
Cooling	Built-in fan	Exhaust to rear
Size (HxWxD) inches	5 ⁷ / ₃₂ x 8 ¹ / ₃₂ x 15	
(half rack) mm	132.5 x 212 x 381	
Net weight	45lbs	
	20.5Kg	

Fractional dimensions in light face type are in inches, dimensions in bold face type are in millimeters.

Tolerance: $\pm 1/64"$ (0.4) between mounting holes; $\pm 1/32"$ (0.8) other dimensions

