

PHOTO VOLTAIC SIMULATOR

Application: MELT series of low time constant photovoltaic source simulators are available in more than 10 different models (10 to 10,000 kilo watts) including some tailor made models practically offering readymade electrical loading simulation solution in measurement, testing / diagnostic of any principal parameter like power, voltage/current as well as other inferential parameter like rated power/torque capacity, overload reactive /real power, torque capacity, efficiency, plotting torque/speed and power/speed curve, desired phase trajectories of D.C./A.C. generator, phase converter, slip ring motor, frequency converter (low/high rpm), transformer, switchgears, transmission/distribution line, battery, rectifier or any non-linear load in constant resistance/power or current mode or simulate source behaviour of power generating capacity of electrical/electronic/mechanical devices like thermoelectric generator, photo-voltaic cell, hydroelectric turbine, wind generators, welding generators etc. These fast responding load controllers/source simulators has ability to detect fast variation in alternator parameters on account of its ultra low constant due to low mechanical time constant, windage losses, least rheological problem, mechanical black-lash/ dead band, and exhibits a repeatable and hysteresis less Torque/Power vs. Excitation current characteristics which guarantees accurate identification of parameters during steady state/transient conditions.

Operating Principle:

These load controller/source simulators can operate in both absorbing mode as well in sourcing mode (four/two/single quadrant) with smooth transition between each mode. While performing in regenerative mode, power is transferred into electricity main. with this type of load controller an infinitely small variable load can be applied at constant resistance/current/power/torque mode or profiled in specific manner. It offers linear/stable parametric. These load controllers can be used to estimate internal losses in captive source while working in driving mode.

Power/voltage absorbed/delivered by load controller is given as under....

$$P = V_1 \cdot V_1 / Z - V_1 \cdot V_2 \cdot \cos(\theta_1) / Z$$

V_1 : source voltage, V_2 : controlled load voltage

Z : network impedance, θ_1 : phase shift between V_1 & V_2 ,

Feedback controlled power supply ensure fine resolution in loading i.e. 0.1% of current/voltage/power OR derived unite at any time, with a very high degree of stability and repeatability.

General Electrical /Mechanical Specification:

Main Operating voltage: 180-240 volts, 1 phase, 40-60 Hz

Absorbed power: upto 1500 kilo watt

Under Loading source voltage/current: 6000 volt/1000 D.C./AC

Under Loading source Voltage/current ripple: 10% of reading maximum output

Loading Voltage/current harmonic: 3% of reading maximum output

Load compatibility: linear/non-linear power source (AC/DC)

Loading mode: 1. constant current/ 2. Constant voltage

Loading current regulation:

Current regulation: 1% of load current and upto 0.001% Voltage

(Input voltage: $\pm 2\%$ of maximum current for a $\pm 10\%$ input line change)

Loading Resolution: 0.1 volt /0.1 amps and upto 0.001% Voltage regulation:

1% of reading loaded voltage source and upto 0.001% Voltage

Control: 1.cascade mode feed back control (constant voltage/current)

Loading Accuracy: 99% of set point (Voltage/current)

Loading Resolution: 0.1 volt /0.1 amps and upto micro volt/amp

Overload: 125% for 15 min

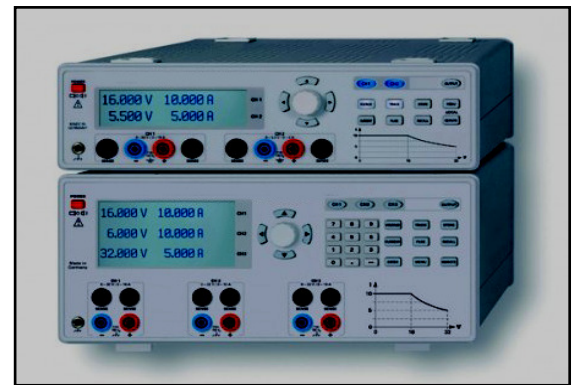
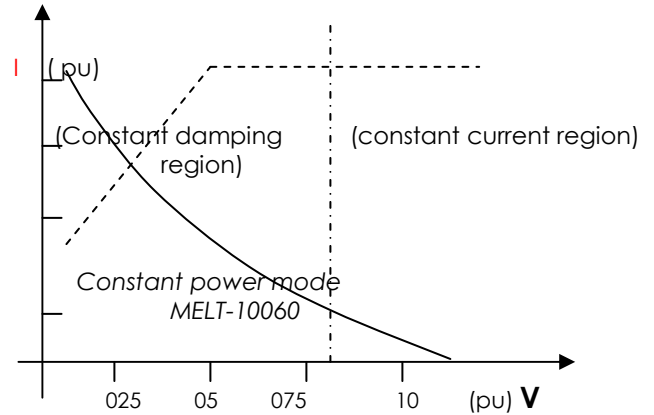
Soft start: 0.1-10 second adj.

Protection: Current limit/Current trip: against any reverse polarity to reset power supply to zero./ Short circuit and over load protection./

Switchgear: O/L, ELCB

Display: 5-1/2 digit red glow display for voltage/current /power

Interface: RS-232 connectivity



MELT50120

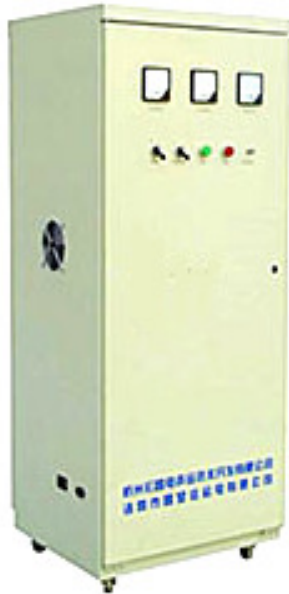
Load controller Test Bench (grid load simulator)

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PHOTO VOLTAIC SIMULATOR



ELECTRONIC A.C. LOAD TESTER
MELT-10060



ELECTRONIC TURBINE LOAD SIMULATOR
MELT-50120

Technical specifications and selection chart (MELT series)

P<2000.0 kilowatts

Model	Power (K.W.)	Rated volt AC/DC	Ampere AC/DC	Frequency KHz	Cooling Water/Air	Thermal rise °C (an hour)
MELT010008	100.0	400/800	250.0/125.0	Upto 800	Air	65
MELT005004	050.0	400	125.0	Upto 800	Air	65
MELT002004	020.0	400	50.0	Upto 800	Air	65
MELT001002	010.0	200	50.0	Upto 800	Air	65
MELT000502	005.0	200	25.0	Upto 800	Air	65
MELT000202	002.0	100/200	20.0/10.0	Upto 800	Air	65
MELT000102	001.0	100/200	10.0/5.0	Upto 800	Air	65
MELT000101	000.5	10/20/50	50/25/10	Upto 800	Air	65

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Technical specifications and selection chart (MELT series)

P<1500 watts

Model	Power - (watts)	Voltage AC/DC	Frequency K.Hz	Amps (AC/DC)	Cooling Water/Air	Thermal rise °C (an hour)
MELT02501	250.0	< 50 /option	Upto 800	<03.0	Air	65
MELT01001	100.0	< 50 /option	Upto 800	<01.0	Air	65
MELT00501	50.0	< 20 /option	Upto 800	<3.0	Air	65
MELT00201	20.0	< 10 /option	Upto 800	<2.0	Air	65
MELT00101	10.0	< 10 /option	Upto 800	<15.0	Air	65
MELT00501	5.0	< 6 /option	Upto 800	<10.0	Air	65
MELT00201	2.0	< 3 /option	Upto 800	<0.66	Air	65
MELT00101	1.0	< 3 /option	Upto 800	<0.33	Air	65

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