



# LOW POWER AC AND AC/DC MOTOR TEST SYSTEMS

## Application

PHENIX Technologies offers a complete line of motor test systems for AC, DC, synchronous and traction motors. These systems can be designed to test a wide range of horsepower and voltage classes. Many other applications requiring a continuously variable AC or DC power supply can be satisfied by one of these units in an appropriate configuration.

PHENIX Technologies manufactures the widest range of motor test systems available. This brochure describes our line of low power units which includes several standard models with AC ratings of 100 kVA or 150 kVA. Several models also include DC capability. Customers with special requirements can have a unit custom designed with ratings other than those described for units larger than 150 kVA.

The standard configuration is a single, industrial grade cabinet (which we manufacture to our own

demanding specifications) containing all controls, instrumentation, and safety/ protective features required for complete load or no-load testing.

PHENIX Technologies is the only manufacturer able to offer two distinctly different means of regulating the output from the motor test set. For most applications, our time tested SCR controller will satisfy the requirements. Our SCR package is both economical and reliable and also offers the advantages of fast rise time and instantaneous return to zero. Some applications, however, require a pure sine wave over the full output range. This is true, for example, when the test set will also be used for transformer testing. In these cases, the PHENIX Column-Type Regulator is the solution.

## Standard Design Features

- ▼ The AC supply includes four output voltage taps up to 600 V. The output on each tap is continuously adjustable from near zero to 100% of full tap rating. Other voltage ranges are available.
- ▼ The duty cycle on all supplies is 1 hour ON/1 hour OFF. In addition, the AC supply can provide up to 200% of rated current for 2 minutes so as to provide the high inrush current needed to start large motors.
- ▼ Complete instrumentation is provided to accurately measure the electrical characteristics of the motor under test. All meters are 3½ digit with 0.75" LCD display and accuracy +/-1.0% FS.
- ▼ A circuit breaker with indicator for control power is mounted on the front panel.
- ▼ Current limit adjustment allows the AC output current to be limited over a range of approximately 10% to 200% of nominal. SURGE ON testing is possible by adjusting the current limit to maximum on SCR models.
- ▼ Output voltages are selected with a manual tap switch.
- ▼ AC meters include one digital single-range volt meter and one digital single-range currentmeter with phase selector switch.
- ▼ DC meters include one digital single-range volt meter and one digital single-range currentmeter for both the armature and the field supplies.

- ▼ Ground fault detector with indicating lamp and reset pushbutton is designed to shut down the test set in case the ground current exceeds five amperes.
- ▼ Transient protection on all meters and relays.
- ▼ Undercurrent protection on the DC field supply.
- ▼ Fork and crane lifting capability.

Model MTS100S-75



## Safety Features

- ▼ Five amp ground fault detection circuit with indicator and reset button.
- ▼ External interlock provision.
- ▼ External warning circuit provision.
- ▼ Flashing red warning lamp.
- ▼ Recessed plugs for twist-lock jacks on output leads.

## Standard Input Voltages and Currents—Technical Specifications of Standard Models

Model	MTS100S	MTS100R	MTS-100S-75	MTS-100R-75	MTS150S	MTS150R	MTS150S-110	MTS150R-110
Standard Input	240VAC : 260A	240VAC : 260A	240VAC : 260A	240VAC : 260A	N/A	N/A	N/A	N/A
Power	480VAC : 130A	480VAC : 130A	480VAC : 130A	480VAC : 130A	480VAC : 200A	480VAC : 200A	480VAC : 200A	480VAC : 200A
AC Output Power	100kVA	100kVA	100kVA	100kVA	150kVA	150kVA	150kVA	150kVA
AC output Tap	120VAC : 400A	120VAC : 400A	120VAC : 400A	120VAC : 400A	120VAC : 400A	120VAC : 400A	120VAC : 400A	120VAC : 400A
Voltages/Current	240VAC : 240A	240VAC : 240A	240VAC : 240A	240VAC : 240A	240VAC : 360A	240VAC : 360A	240VAC : 360A	240VAC : 360A
	480VAC : 120A	480VAC : 120A	480VAC : 120A	480VAC : 120A	480VAC : 180A	480VAC : 180A	480VAC : 180A	480VAC : 180A
	600VAC : 96A	600VAC : 96A	600VAC : 96A	600VAC : 96A	600VAC : 144A	600VAC : 144A	600VAC : 144A	600VAC : 144A

DC Field (std)			300VDC : 10A	300VDC :			300VDC : 10A	300VDC : 10A
DC Armature Power			75kW	75kW			110kW	110kW
DC Armature Tap	125VDC		125VDC : 300A	125VDC : 300A			125VDC : 400A	125VDC : 400A
Voltage/Current	250VDC		250VDC : 300A	250VDC : 300A			250VDC : 400A	250VDC : 400A
	550VDC		550VDC : 125A	550VDC : 125A			550VDC : 200A	550VDC : 200A

### Weights and dimensions

width	31" (790mm)	52" (1321mm)	38" (965mm)	52" (1321mm)	48" (1220mm)	56" (1425mm)	48" (1220mm)	56" (1425mm)
length	44" (1120mm)	68" (1730mm)	54" (1372mm)	68" (1730mm)	63" (1600mm)	68" (1730mm)	63" (1600mm)	68" (1730mm)
height	74" (1880mm)	74" (1880mm)	74" (1880mm)	74" (1880mm)	74" (1880mm)	85" (2160mm)	74" (1880mm)	85" (2160mm)
weight	1800 (816kg)	2900 (1315kg)	2100 (952kg)	3200 (1452kg)	3200 (1452kg)	4200 (1905kg)	3600 (1633kg)	4600 (2087kg)

## DC Outputs

A DC armature supply with a kW rating up to approximately 75% of the kVA rating can be included on these units. The standard field supply rating is 0-300VDC, 10A with other ratings available as options. The DC armature supply is continuously variable and is adjusted

from near zero to full output voltage. The field supply is independent and also continuously variable. Additionally, the field supply includes field undercurrent protection with indicating lamp, reset button, bypass switch, and an on/off indicating pushbutton.

## Options Available

- ▼ Full three phase metering for the AC supply.
- ▼ 240 VAC input (MTS 100 only).

## The PHENIX Technologies Product Line

- ▼ High Voltage AC Dielectric Test Sets
- ▼ Resonant Test Sets
- ▼ Variable Frequency Resonant Test Sets
- ▼ DC Hipots and Insulation Test Sets
- ▼ Automatic Insulating Material Testers (D149)
- ▼ Microhmeters
- ▼ Liquid Dielectric Test Sets
- ▼ Megohmmeters
- ▼ AC/DC Kilovoltmeters
- ▼ Partial Discharge Detector
- ▼ Vacuum/Oil Interrupter Testers
- ▼ Bucket Truck Testers
- ▼ High-Frequency Cable Aging Test Sets
- ▼ Heat Cycling Test Sets
- ▼ Rubber Goods-Protective Equipment Testers
- ▼ Core Loss Testers
- ▼ AC, DC and AC/DC Motor Test Sets
- ▼ Water Brake Dynamometers
- ▼ Transformer Test Sets
- ▼ Frequency Response Analyzer
- ▼ High Current / Circuit Breaker Test Sets
- ▼ Recloser Test Sets
- ▼ DC Power Supplies
- ▼ High Voltage DC Cable Thumpers
- ▼ High Voltage Terminations
- ▼ High Power Column-Type Variable Transformers
- ▼ High Power Thoma-Type Variable Transformers
- ▼ Voltage and Current Stabilizers
- ▼ Impulse Generators/Standard Capacitors/  
Coupling Capacitors

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