

FEATURES

- Standard Modules
 - Volt meters
 - Current meters
 - Watt meters
 - Physical measurement
 - RS232 port
 - Output regulation
 - + More
- Flexible selections
- Rugged packaging
- Complete System design
- Full tested
- Guaranteed performance

BENEFITS

- Easy integration
- Ease of use
- Accurate readings
- Customized system from standard modules
- Complete package
- Reasonable delivery

TEST APPLICATIONS

- Motors
- Transformers
- Appliances
- Inverters
- Power Supplies
- UPSs
- Prototype
- Heat Runs
- Life
- Production

DESCRIPTION

Power testing often requires a variable voltage supply to allow testing over a wide range of voltages. The Hipotronics Modular Power Test Systems provide a complete, turn-key package for a fully instrumented and controlled variable voltage high power supply configured to your exact specifications. The various modules described in this brochure are designed to be used with the Hipotronics' line of Peschel Variable Transformers™ (PVTs) as described in a separate brochure (please see data sheet PVT-DS-1). This module selection allows the user/specifier great flexibility in customizing a power test set to their specific requirement. To get started, first decide on the PVT that is best suited for your application. Make note of the cabinet code that is listed on the data sheet PVT-DS-1. For a complete description of the recommended cabinets turn to the "CABINET MODULES" listing on page 2 of this data sheet. Then proceed to the control and instrument modules and make your selections from them. For assistance with module selection or custom requirements contact Hipotronics at 1-800-727-4476, ext. 289.



HIPOTRONICS[®]
THE MEASURE OF A LEADER

Modular Power Test Systems



A 100 kVA Modular Test Set with Metering Modules, 3 phase AC voltage and current, Wattmeter module, Power Control module and Motor Testing module

CABINET MODULES

All cabinets listed below are indoor NEMA-1 type, and are constructed with a sturdy, black painted steel frame. The side panels, back panel and filler panels are constructed of .125 thick aluminum, painted light blue. *If outdoor cabinets are required please contact Hipotronics for pricing and other details.*

Cabinet Catalog No.	Size (inches) W x D x H	Weight (lbs.)
PVT-CAB-CA	30 x 25 x 31	175
PVT-CAB-CB	30 x 25 x 52	225
PVT-CAB-CC	30 x 25 x 73	275
PVT-CAB-CC1	30 x 34 x 73	325
PVT-CAB-CD	30 x 42 x 73	360
PVT-CAB-CE	48 x 36 x 76	500
PVT-CAB-CF	48 x 48 x 76	590
PVT-CAB-CG	48 x 60 x 76	820

Note: Due to the module selection mix it is possible that the cabinet size will be increased. If cabinet dimensions are important please contact Hipotronics for firm size.

POWER CONTROL MODULE

- CAT No. PVT-CONTROL

The power control module includes a **lineside contactor**, an **input circuit breaker**, and a control panel. The contactor and circuit breaker will be sized for the rated input voltage and current of the PVT. A flashing red warning light will be mounted on top of the cabinet. The control panel will be brushed aluminum with black and red legends and a protective epoxy clear coat.

The following features will be included:

Control Panel:

- Control Power Circuit breaker and Indicator
- High Power On/Off Switch
- Raise/Lower Test Voltage Push Buttons
- Emergency Off Red Mushroom Switch
- Output Overcurrent Protection
- Zero Start Interlock and Indicator
- External Interlock and Indicator
- Resettable Output Overload

ELECTRICAL MEASUREMENT MODULES

AC Voltage Measurement

There are two selections depending on whether the test system has single-phase or three-phase output. Each module includes 3½ digit, 0.5" LED display meters with +/-1% accuracy (full scale) from zero to the maximum rated output voltage of the PVT. The meters are mounted on a brushed aluminum panel with black and red legends and a protective epoxy clear coat.

- CAT No. PVT-VM-SD Single meter panel for single-phase systems. Measures line to line or line to neutral voltage as applicable.
- CAT No. PVT-VM-TD Three meter panel for three-phase systems. Measures line to line voltage.

AC Current Measurement

- CAT No. PVT-CM-SD Single meter panel for single-phase systems. Measures line to line or line to neutral current as applicable.
- CAT No. PVT-CM-TD Three Phase Digital, one meter panel for each phase, measures line to line current.

There are two selections depending on whether the test system has single-phase or three-phase output. Each module includes 3½ digit, 0.5" LED display meters with +/-1% accuracy (full scale) from zero to the maximum rated output current of the PVT. The meters are mounted on a brushed aluminum panel with black and red legends and a protective epoxy clear coat.

DC Metering

- CAT No. PVT-VMCM-DC

For those units with a DC output PVT, Hipotronics offers a combined metering panel with two digital meters, one for voltage and one for current. Both meters are 3½ digit, 0.5" LED display meters with +/-1% accuracy (full scale) from zero to the maximum rated output voltage or current of the PVT.

Wattmeter Modules

- CAT No. MTS-SWATT-1 for use in single-phase test sets, w/o RS232 Port
- CAT No. MTS-WATT-1 for use in three-phase test sets, w/o RS232 Port
- CAT No. MTS-SWATT-2 for use in single-phase test sets, w/ RS232 Port
- CAT No. MTS-WATT-2 for use in three-phase test sets, w/ RS232 Port

For applications requiring power measurement, a digital wattmeter can be incorporated into the test set. If the wattmeter is for use in three-phase test sets, the watt transducer will be a 3-line, 4-wire type that monitors all incoming phases and provides accurate readings even under imbalanced conditions.

RS232 PORT AND SOFTWARE MODULES

- CAT No. PVT-RS232-1PH for use in single-phase test sets
- CAT No. PVT-RS232-3PH for use in three-phase test sets
- CAT No. PVT-RS232-DC for use in DC test sets

For applications requiring a data port output, Hipotronics can supply an optically isolated RS232 Port and application software. With this module, data can be collected from all voltage and current metering. In addition, it will also allow data collection from any physical measurement or wattmeter modules that are ordered. Upon command, the data will be printed in our standard format. The RS232 Port is front mounted for ease of connection to a customer-supplied IBM compatible PC.

Software is written in Microsoft ProBasic 7.0 and is shipped in a compiled version only in both 5¼" and 3½" high density formats for use with an IBM-compatible computer. The software will acquire data, save to a database, retrieve it from a database, and allow printout of test reports.

PHYSICAL MEASUREMENT INSTRUMENTATION MODULES

Vibration Meter

- CAT No. MTS-VIB-1 for use in systems without an RS232 Port
- CAT No. MTS-VIB-2 for use in systems with an RS232 Port

For applications requiring vibration measurement, Hipotronics can incorporate a PMC Beta Model 401B vibration analyzer into the test set. The vibration analyzer will consist of the analyzer, four position selector switch, four input jacks, and two pickups with magnetic mounts. Up to two additional probes can be purchased (at additional cost) and added to the test set. The vibration analyzer will read in 0-1/3/10 mil displacement ranges and also in various inches/second velocity ranges. (Note: data will only be acquired by the RS232 port in displacement mode). If the RS232 Port module is ordered, vibration readings for all connected probes will be read directly by the computer and printed out on a test report for customer verification/inspection. (Note: data will only be acquired by the RS232 port in displacement).

Temperature Meter

- CAT No. MTS-TEMP-1 for use in systems without an RS232 Port
- CAT No. MTS-TEMP-2 for use in systems with an RS232 Port

For applications requiring temperature measurement, an Omega Microprocessor Controlled Temperature Indicator can be incorporated into the test set. The meter will read in Celsius temperature scale. The meter will consist of a digital readout, a four-position selector switch, four input jacks, and two E-type surface mount thermocouples with built-in magnetic mounts. Up to two additional thermocouples can be purchased (at additional cost) and added to the test set. If the RS232 Port module is ordered, temperature readings for all connected thermocouples will be read directly by the computer and printed out on a test report for customer verification/inspection.

Digital Tachometer

- CAT No. MTS-TACH-1 for use in systems without an RS232 Port
- CAT No. MTS-TACH-2 for use in systems with an RS232 Port

For applications requiring rotational measurement, a non-contact, digital tachometer can be incorporated into the test set. The tachometer will consist of a digital readout, non-contact pickup, and 20' connecting cord. If the RS232 Port module is ordered, tachometer readings will be read directly by the computer and printed out on a test report for customer verification/inspection.

MOTOR TESTING POWER MODULES

- CAT No. PVT-MTM

This module includes automatic overload protection rated at 250% for one minute and 110% for one hour. This allows maximum rated overload current to be drawn for motor starting but controls the amount of time that the overload is permitted. The overload indicators and the reset control are mounted on a brushed aluminum panel with red and black legends with an epoxy clear coat. This module also includes a ground fault interrupter circuit that will trip when any phase to ground short circuit exists.

REGULATION MODULES

Catalog No.	Type of Regulation
PVT-FRR-1V	AC Voltage
PVT-FRR-1A	AC Current
PVT-FRR-1DV	DC Voltage
PVT-FRR-1DA	DC Current

The full range regulator module can be used with any motorized PVT to adjust and maintain the output voltage to a desired level within the range of the transformer. It will automatically compensate for any voltage fluctuations due to either line or load changes and maintain the output to within $\pm 1\%$ of full rated output voltage. The FRR can regulate voltage or current either AC or DC. All regulation modules can be operated from 0-10 Vdc or a 4-20 mA feedback reference. Please specify at time of order.

The FRR is a solid state device. A feedback signal from the output of the PVT is compared to an adjustable reference voltage. The reference voltage is set by a 10-turn potentiometer located on the front panel of this module. When there is a difference between the feedback signal and the selected voltage reference of the 10-turn potentiometer, the FRR will cause the motor of the PVT to drive in the correct direction until the difference is reduced to within the present tolerance. The FRR includes a switch to select either regulated or manual model of operation.

Note: This module is also available in two other configurations: 1. Remote Control Regulator, in which the 10 turn potentiometer is separate and can be remotely located from the regulator package; 2. Bench mount RCR in which the regulator is contained in a bench mountable metallic box. Consult the factory for additional information.

FREQUENCY METER MODULE

- CAT No. PVT-FM

This module includes a digital meter to monitor the mains frequency. The meter will provide readings from 47.0 Hz through 99.9 Hz with an accuracy of $\pm 0.1\%$ from -25°C to 60°C . The digital meter is a 0.4" high, 3 digit, red LED display. The meter is mounted on a brushed aluminum panel with black and red legends and a protective epoxy clear coat.

BLANK PANEL

- CAT No. PVT-BP

A brushed aluminum panel is provided for the addition of custom instrumentation by the user. The panel size is $5\frac{1}{4}$ " H x 19" W and is protected by an epoxy clear coat.

The following options are also available. The specifications and the pricing for these options are directly related to the output voltage, the power rating or the weight of the test set. Please consult our sales offices for specifications and pricing.

VERNIER VOLTAGE ADJUSTMENT MODULES

A low power variable transformer and a buck/boost transformer are combined to allow more precise output resolution. Typical resolution available is 5% of the adjusted output voltage. The control for the vernier is mounted on a brushed aluminum panel with black and red legends.

OUTPUT JACKS AND PLUGABLE CABLES

This option provides output jacks mounted on the side of the cabinet and 3 plugable cables, each 15 ft. long. All components are rated for the full output voltage and current of the specified output power source.

CASTERS

Four industrial rated casters can be added to the base of the enclosure. The caster set will consist of two (2) fixed and two (2) swivel types. The casters are sized so that 3 out of the 4 casters can handle the total weight of the test set. The caster wheels feature ball or roller bearing construction and are molded of urethane rubber.

For further information, contact:

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NOTE: Because Hipotronics has a policy of continuous product improvement, it reserves the right to change design and specifications without notice.