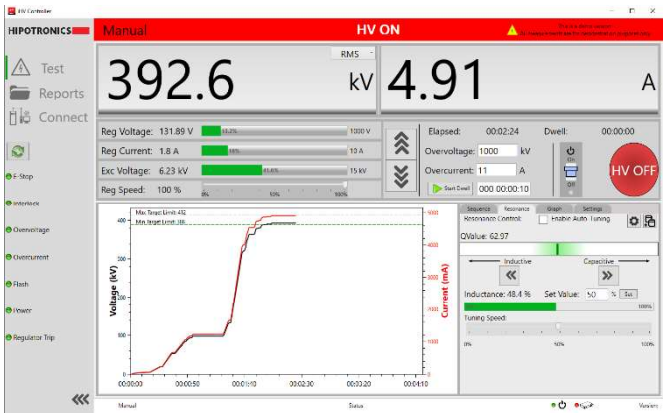
iHV

Intelligent Digital AC and DC Controller – MSR, TSR, UHVDC, AC Test Systems

The iHV is HIPOTRONICS' new state-of-the-art controller designed for AC resonant test systems, and ultra-high voltage DC systems. The iHV is included in our new test systems and available to upgrade existing systems to this modern control solution. The iHV software has a user-friendly interface designed to work in a wide-range of applications. The iHV's intuitive design and flexibility to set different test parameters allows the operator to easily and efficiently complete required tests.

The controller is operated through HIPOTRONICS' software installed on a customer supplied computer. Each iHV is equipped to support standard Ethernet or LC-type fiber optic connections. HIPOTRONICS can also provide a list of communication protocols if customers want to use their own custom control system.

The iHV controller assures accurate voltage and current measurements for users. It also has control and measuring capability for Q value, flash sensitivity, ripple and polarity reversal. The iHV's safety features include external interlock, and E-Stop to ensure safe high voltage operation.





FEATURES

- ☑ **Rackmount or benchtop** design to meet each customer requirement
- ☑ **Multiple measurements** including output voltage, current, and ripple
- ☑ **Adjustable test parameters** such as target voltage, maximum current, ramp rate, and dwell time
- ☑ **Record and view test results** by saving and exporting results csv, docx or PDF
- ☑ **Meter and graph display** with zoom and pan capability, and tolerance bars
- ☑ **Partial Discharge** measurement integration with 3rd party PD detector suppliers
- ☑ **Auto tuning and polarity reversal** for fast and accurate testing

BENEFITS

- ☑ **Simple to Use** with minimal amount of setup time and intuitive control software allows for simple testing
- ☑ **Plug & Play** design with previous Windows based controllers
- ☑ **Multi-functional** for use with AC or DC test systems.
- ☑ **Efficient** – Saved presets and sequences for repeatable accurate HV testing
- ☑ **User-Friendly** HIPOTRONICS control software
- ☑ **Safe Operation** with interlock and emergency stop
- ☑ **SIL 3 Compatible**

TSR Series

Tank Series Resonant Systems - 30...200kV : 250kVA...2,500kVA

The **TSR series** is a high voltage source that ensures your power cables, power factor correction capacitors, generators, bushings and GIS are tested in accordance with the latest standards.

TSR systems, with multiple taps, can power a range of applications. As part of a series resonant circuit, they provide undistorted high voltage at system frequency for testing high kVAR capacitive loads. TSR systems are designed with high system Q's, and hence, require low single phase input power which results in lower installation and operating costs.

A comprehensive range of voltages between 30kV to 200kV and power ratings from 250kVA to 2500kVA are available.



FEATURES

- ☑ **Multiple Q Values** to meet variety of applications
- ☑ **Minimum Power** input requirements
- ☑ **Compact** Design
- ☑ **Series or Parallel** Resonant Operation
- ☑ **Low PD** Operation
- ☑ **No EMI Mains Noise / Interference**
- ☑ **Oil Temperature Indicator(s)**
- ☑ **Windows** Based Controls

BENEFITS

Low Life-Cycle Cost - rugged design minimizes system down time

Series Resonant - provides a protective voltage collapse should device under test fail

Pure AC Sine Wave at output

Lower Installation Cost for power service

Testing Made Easy with upgraded software

INDUSTRY APPLICATIONS

Ideal for testing:

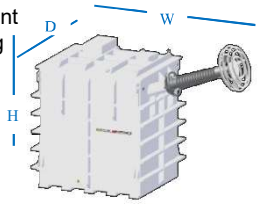
- Power Cables
- Generators
- Power Factor Correction Capacitors
- Other Possible Applications (CTs, PTs, and CCVTs; GIS; Bushings; PD Testing)

TYPICAL MODELS AND RATINGS BY APPLICATION

FOR POWER CABLE						
Model	**kV Class Cables** (maximum voltage)		**Voltage (kV)**	**Tap Voltage**	**Tank Size (m)** W x H x D *including output*	**Tank Weight (kg)**
	Per **IEC**	Per **AEIC**				
TSR75-750	45 kV	35 kV	75	75/50	1.4 x 1.9 x 1.95	4300
TSR100-1M0	66 kV	46 kV	100	100/75/50	1.5 x 2.1 x 2.2	5700
TSR150-2M0	66 kV	69 kV	150	150/125/100/75	1.7 x 2.1 x 2.4	7100
TSR200-2M0	138 kV	115 kV	200	200/100/50	2.0 x 3.2 x 4.9	14000
TSR250-2M5	161 kV	138 kV	250	250/150/75	2.1 x 3.8 x 4.9	23000

Included:
- Double-Shielded Isolation Transformer (DSIT)
- Power Regulator / Line Filtering
- Exciter Transformer
- High Voltage Variable Reactor
- High Voltage Filter / Base Load
- High Voltage & Grounding Cables
- Voltage Divider
- iHV Controller
- Control / Power Interconnect Cables (10, 20, 30 or 50m)

Accessories & Options:
- Partial Discharge Test Equipment
- Power Factor / Tan δ Measuring Equipment
- Shielded Room
- Engineering Package

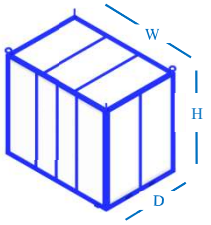


Consolidated prior to shipment.

FOR GENERATORS				
Model	**Voltage (kV)**	**Tap Voltage**	**Cabinet Size (m)** W x H x D	**Cabinet Weight (kg)**
TSR60-600	60	60/30	2.0 x 2.0 x 2.7	4500
TSR60-750	60	60/30	2.0 x 2.0 x 2.7	5000
TSR60-1M2	60	60/30	2.0 X 2.3 X 2.8	5500
TSR60-2M2	60	60/30	2.0 X 2.3 X 2.8	6500

Included:
- Power Regulator
- Exciter Transformer
- High Voltage Variable Reactor
- Control / Power Interconnect Cables
- Portable System Enclosure
- Protective Sphere Gap
- iHV Controller
- Voltage Divider
- Base Load

Accessories & Options:
- Power Factor / Tan δ Measuring Equipment
- Partial Discharge Test Equipment



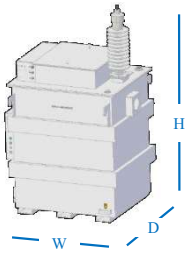
FOR CAPACITORS			
Model	**Voltage (kV)**	**Tank Size (m)** W x H x D *including output*	**Tank Weight (kg)**
TSR30-2M0	30	1.9 x 3.2 x 2.2	14000

FOR CAPACITORS:
The models listed in this table (left) are **typical** orders. However, several more models exist. Customers are required to provide specs (e.g. minimum and maximum voltage) and the unit is designed thereafter.

Included:
- Power Regulator
- Exciter Transformer
- High Voltage Variable Reactor
- Control / Power Interconnect Cables (10, 20, 30 or 50m)
- iHV Controller

Accessories & Options:
- Power Factor / Tan δ Measuring Equipment
- Partial Discharge Test Equipment

Consolidated prior to shipment.

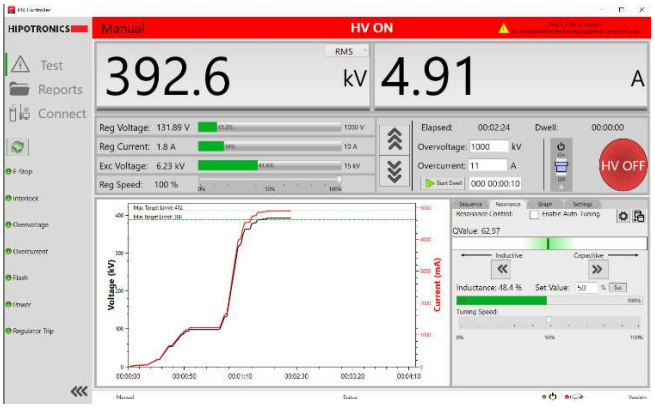


Notes:
- Dimensions and weights are approximate
- For other input voltages please consult factory*

Customer Supplied Cables per Local Electrical Codes:
- Mains Input
- System and Device Under Power

iHV CONTROLLER





ONSITE PHOTOS







ORDERING INFORMATION

TSR100-2M0R2D54^

Maximum Series Output Voltage

Maximum Series Output Power

System Application
R = Cable Routine Test
T = Cable Type Test
X = Applied Transformer Test
P = Instrument Transformer Test
G = GIS/SF6/Switchgear Test
A = Apparatus – General
C = Power Factor Capacitor

System Partial Discharge Spec
2 = 2 pC
5 = 5 pC
X = 10 pC
T = 20 pC
C = 100 pC
N = No PD Spec required

Control Type
Consult Factory

System Q
1 = 10
2 = 20
3 = 30
4 = 40
5 = 50

Operation Frequency
5 = 50 Hz
6 = 60 Hz

System Regulator Input Voltage

Use Standard Input Letter Designations