SATECH POWER
Industrial Grade Power System

IVR / Variable Transformer / Oil-immersed Type

HPI-O Series 1Phase & 3Phase 10～10,000KVA

Types of Outlook

Multi Indicators

High Voltage Oil Type

W/ Optional Indicators

Standard Oil Type

W/ Optional Indicators+Brake

Application

- Withstand Voltage Test
- Transformer Characteristic Test
- DC Motor Control Speed
- Pump
- Metallurgical Industry
- Electrical Manufacturing
- Light Industry
- Test Benches
- Home Appliances Temperature Control
- Step-less Output Voltage Adjustment of Transformer
- Step-less Adjustment for the Voltage to be Used in Various Industrial Machinery on Loading

Transformer

Motor

Pump

Metallurgical Industry

Electrical Manufacturing

Light Industry

Test Benches

Home Appliances

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Industrial Grade Power System

HPI-O Series IVR/Variable Transformer/Slidac, Oil-immersed type

The HPI-O series IVR / Variable Transformers / Slidac are available from 10 to 10,000 KVA as standard, Single Phase system from 10 to 2,000KVA; Three-phase system from 10 to 10,000KVA. Standard models include input voltages from 110V, 220V, 380V, 440V, 3.3KV, 6.6KV, 11KV, 22KV. Special units for other voltages are available on order. They are categorized by their input voltage, output voltage and number of phases. If you do not find the IVR / Variable Transformers / Slidac that meets your application requirements, please contact us with your detailed specifications.

While today there are many modern alternatives to the IVR / Variable Transformers / Slidac for controlling voltage, the load tolerant nature of the IVR / Variable Transformers / Slidac ensures that it is still the best and most reliable method of control for a large variety of applications where step-less control of a distortion-free AC output and dependent parameters are essential. Typical uses include quality control testing, electronic equipment burn-in, low voltage performance evaluation, DC rectifier / regulator analysis or other industrial and engineering applications. Our endurable ranges of IVR / Variable Transformers / Slidac all deliver an efficient and trouble free method of varying AC voltages with an output from zero to line voltage.

- **ROBUST, WEAR-FREE, LONG LIFE SPAN**
  No Contact Points (BRUSHLESS).100% Step-less Voltage Adjustment during Loading. Almost Zero Maintenance. 20Years at least life span.
- **EXCELLENT PERFORMANCE**
  By use of high flux silicon steel plate to reduce no load loss, loading loss, no load current to minor, bring up the following advantages:
  - Improve Plant Performance & Efficiency.
  - Increase Facility's Profitability
  - Increase Equipment Life Span
  - Reduce Production Costs
  - Reduce Maintenance Costs
- **OPERATING SYSTEM: ELECTRIC (AUTO), MANUAL ADJUSTMENT AND ELECTRO-MAGNETIC BRAKE**
  - Remote Control Terminal Connection
  - Upper Limit & Lower Limit Contact: 1A1B 5A
  - Voltage-UP & Voltage-DOWN Push Button with 3M length cable for operation
- **FULL ALARMING CAPABILITIES (VISUAL AND AUDIO)**
- **VOLTMETER & AMMETER DISPLAYS (OPTION)**
- **SUITABLE FOR BIGGER CAPACITY**
  Induction type is the only stand-alone system can be manufactured up to 10,000KVA.
- **HIGH RELIABILITY**
  Strict QC before ex factory to bring high quality. Manual / Electric Adjustment Test, Insulation Resistance Test, Short Circuit Test, Temperature Rise (Full Load) Test, Inductive Voltage Test, Upper Limit / Lower Limit Switch Test, No Load Loss & No Load Current Test, Commercial Frequency Withstand Voltage, Withstand Voltage Test (Terminal – Chassis)
- **EASY MAINTENANCE & SERVICE**
  Modular design. All components have been standardized, easy for maintenance and repair. Reduce its service time. Composed of Contact-less components, easy for maintenance. Only need to internal, no other special maintain.

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Technical Specification (1-Phase Series)

MODEL	HPI-O-1110 ～ 112000
Capacity	10KVA ～ 2,000KVA
PRIMARY	
Phase & Wire Number	1Phase 2Wire+G
Input Voltage	110V, 220V, 380V, 440V, 3.3KV, 6.6KV, 11KV, 22KV (other voltages are available on order)
Input Frequency	50Hz / 60Hz
Input Power Factor	> 0.95
SECONDARY	
Phase & Wire Number	1Phase 2Wire+G
Output Voltage	+/-10% ~ +/-100% Adjustable from input voltage
Output Frequency	50Hz / 60Hz
Output efficiency	>/= 98 % at Full Load Typical
Voltage Variation Rate	1.0 (Resistive load); Variation Rate <10%
Audible Noise	< 55dBA at 1meter
Cooling Type	Oil Immersed Cooling type (Option: Air-forced Cooling type), Indoor Application
Insulation Degree	Class B
Dielectric Strength	Primary Coil, Secondary Coil – Earth: AC 60Hz 2000V x 1minute
Insulation Resistance	Primary Coil, Secondary Coil – Earth: >100MΩ (1000V High Resistance Meter)
Operating Circuit	Earth:>10MΩ (1000V High Resistance Meter)
ADJUSTING METHODS	
Adjusting Methods	Electric (Auto) Adjustment & Manual Adjustment & Optional Electromagnetic Brake
Driving Device	Low-voltage 1phase squirrel-cage induction motor
Control Time	< 60seconds (Min Voltage ~ Max Voltage)
Control Method	1) Remote Control Terminal Connection 2) Upper Limit & Lower Limit Contact: 1A1B 5A 3) Voltage-Up & Voltage-Down Push Button with 3M length cable for operation
PROTECTION	
Protection	1) Upper Limit & Lower Limit c/w 2 Stages Protection for Auto Shutdown Protection 2) If the Upper Limit & Lower Limit fails, Ultra Upper Limit & Lower Limit will cut off automatically 3) IVR c/w Upper Limit Contact & Lower Limit Contact for external connection of the Lower Limit start-up, Indications of Upper Limit & Lower Limit 4) Micro Switch: Japan-made Omron Z-15GWB
OVERLOAD CAPACITY	
Overload Capacity	When ambient temperature is lower so as its working temperature does not exceed max. allowable temperature limits (130 ℃) of Class B Insulation, the IVR may allow overloading capacity usage
OVERLOAD CAPABILITY : According to the circumstances judgment of initial loading and ambient temperature, the IVR is designed to withstand instantaneous severe overload.	
</= 100%	Continuous
</= 150%	100 seconds
</= 200%	10 seconds
INDICATOR (OPTION)	
Indicator	Input Voltmeter, Output Voltmeter, Output Ampere (LED Digital Display Type), Up / Down Push Buttons for output voltage selection.
OVERALL CHARACTERISTICS	
Surface Treatment	Powder Coating
Outlook Color	Painting Association #41 or as request
Temperature Rise	120℃ Max. allowable temp. limit (The rated capacity the rated frequency continuous operation at ambient temp. 40℃, daily average temp. below 35℃)
International Standards	IEC439, BS6527, IEEE587
ENVIRONMENT	
Installation location	Indoor
Working Temperature	0℃ ~ 40℃
Relative Humidity	0 ~ 90% (non-condensing, 25℃)
Altitude	<1,000 meter Above sea level

■ All specifications are subject to change without notice.

Technical Specification (3-Phase Series)

MODEL	HPI-O-3310 ～ 3310000
Capacity	10KVA ～ 10,000KVA
PRIMARY	
Phase & Wire Number	3Phase 3Wire+G or 3Phase 3Wire+N+G
Input Voltage	220V, 380V, 440V, 3.3KV, 6.6KV, 11KV, 22KV (other voltages are available on order)
Input Frequency	50Hz / 60Hz
Input Power Factor	> 0.95
SECONDARY	
Phase & Wire Number	3Phase 3Wire+G or 3Phase 3Wire+N+G
Output Voltage	+/-10% ~ +/-100% Adjustable from input voltage
Output Frequency	50Hz / 60Hz
Output efficiency	>/= 98% at Full Load Typical
Voltage Variation Rate	1.0 (Resistive load); Variation Rate <10%
Audible Noise	< 55dBA at 1meter
Connection	Y Connection for 3phase system (Option: Delta Connection)
Cooling Type	Oil Immersed Cooling type (Option: Air-forced Cooling type), Indoor Application
Insulation Degree	Class B
Dielectric Strength	Primary Coil, Secondary Coil – Earth: AC 60Hz 2000V x 1minute
Insulation Resistance	Primary Coil, Secondary Coil – Earth: >100MΩ (1000V High Resistance Meter)
Operating Circuit	Earth:>10MΩ (1000V High Resistance Meter)
ADJUSTING METHODS	
Adjusting Methods	Electric (Auto) Adjustment & Manual Adjustment & Optional Electromagnetic Brake
Driving Device	Low-voltage 1phase squirrel-cage induction motor
Control Time	< 50seconds (Min Voltage ~ Max Voltage)
Control Method	1) Remote Control Terminal Connection 2) Upper Limit & Lower Limit Contact: 1A1B 5A 3) Voltage-Up & Voltage-Down Push Button with 3M length cable for operation
PROTECTION	
Protection	1) Upper Limit & Lower Limit c/w 2 Stages Protection for Auto Shutdown Protection 2) If the Upper Limit & Lower Limit fails, Ultra Upper Limit & Lower Limit will cut off automatically 3) IVR c/w Upper Limit Contact & Lower Limit Contact for external connection of the Lower Limit start-up, Indications of Upper Limit & Lower Limit 4) Micro Switch: Japan-made Omron Z-15GWB
OVERLOAD CAPACITY	
Overload Capacity	When ambient temperature is lower so as its working temperature does not exceed max. allowable temperature limits (130 ℃) of Class B Insulation, the IVR may allow overloading capacity usage
OVERLOAD CAPABILITY : According to the circumstances judgment of initial loading and ambient temperature, the IVR is designed to withstand instantaneous severe overload.	
</= 100%	Continuous
</= 150%	100 seconds
</= 200%	10 seconds
INDICATOR (OPTION)	
Indicator	Input Voltmeter, Output Voltmeter, Output Ampere (LED Digital Display Type), Up / Down Push Buttons for output voltage selection.
OVERALL CHARACTERISTICS	
Surface Treatment	Powder Coating
Outlook Color	Painting Association #41 or as request
Temperature Rise	120℃ Max. allowable temp. limit (The rated capacity the rated frequency Continuously operation at ambient temp. 40℃, daily average temp. below 35℃)
International Standards	IEC439, BS6527, IEEE587
ENVIRONMENT	
Installation location	Indoor
Working Temperature	0℃ ~ 40℃。
Relative Humidity	0 ~ 90% (non-condensing, 25℃)
Altitude	<1,000 meter Above sea level

■ All specifications are subject to change without notice.