

## AC Variable Transformers

**Accurate, Reliable and Long Lasting Voltage Control - for a diverse variety of applications.**

Ashley-Edison's **AE & MAE SERIES** Variable Transformers offer a full range of single and three phase models. Standard models include input voltages from 120VAC to 480VAC and 3 to over 150 Amps. Special units for voltages up to 1000VAC are available to order. They are categorized by their input voltage, output voltage and number of phases. If you do not find the transformer that meets your application requirements, please contact us with your detailed specifications.

While today there are many modern alternatives to the Variable Transformer for controlling voltage, the load tolerant nature of the Variable Transformer ensures that it is still the best and most reliable method of control for a large variety of applications where stepless 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 enduring ranges of variable transformers all deliver an efficient and trouble free method of varying AC voltages with an output from zero to line voltage.

### Ranges Available -

#### **AE SERIES** - SINGLE PHASE

Manually operated variable transformers from 3 to over 100 amps.

HB Models - 220V to 240V > Page 3  
LB Models - 110V to 120V > Page 4



#### **AE SERIES** - THREE PHASE

Manually operated variable transformers from 3 to over 60 amps.

HB Models - 380V to 415V > Page 5 & 8  
- 440V to 480V > Page 6 & 9  
LB Models - 190V to 208V > Page 7 & 10



#### **MAE SERIES** - SINGLE & THREE PHASE

Single & Three Phase motorized variable transformers from 3 to over 150 amps.

Single Phase  
3 to 80 amps - 220V to 240V > Page 11  
- 110V to 120V > Page 12  
Three Phase  
10 to 150 amps - 380V to 415V > Page 13  
- 440V to 480V > Page 14  
- 190V to 208V > Page 15



For applications where the Frequency is also required to be changed, please ask for details on our range of **FCL** Static Variable Output Voltage & Frequency Converters.

## **AE & MAE SERIES**

Manual & Motorised

### AC Variable Transformers

Single & Three Phase

**3 to over 150 Amps**



### FEATURES

- High Efficiency & Excellent Regulation
- Distortion Less Voltage Control
- Low Operating Torque
- Trouble Free Endurable Mechanical Construction for Long Life
- Negligible Maintenance
- Straight forward Installation & Use
- Compliance with International Standards
- CE Conformity & RoHS Compliance
- 1 Year / 12 Months Warranty

## AC VARIABLE TRANSFORMERS

### Proven and Endurable Design

The basic variable auto-transformer consists of a copper winding on a toroidal core of laminated, grain-oriented, silicon steel. A carbon brush, connected to an output terminal, is rotated over the length of a precision-ground, commutator track to tap off voltage at any turn from zero volts to the maximum output voltage of the winding.

Unlike a standard fixed ratio transformer, Ashley-Edison variable transformers are designed to provide an infinitely variable step less output voltage that can be adjusted from 0 to 117% of the transformer's input voltage.



#### Design Features

##### ✓ High Efficiency & Excellent Regulation

In contrast to current hungry rheostats and other resistive type voltage controllers, Ashley-Edison (UK) variable auto-transformers have an extremely small power loss, delivering efficiency of 98% or better.

Within the transformer ratings, our variable transformers deliver, from no-load to full load current, negligible variation in output voltage.

##### ✓ Distortion Less Voltage Control

Due to the superiority of the core design and quality of the steel grade utilised, Ashley-Edison (UK) Variable Transformers provide a facsimile of the input waveform with negligible distortion - an essential feature required by many electronic applications.

##### ✓ Low Operating Torque

Due to the ultra smooth commutator surface, correct and constant contact pressure of the brush on the commutator, combined with the firm positioning of the coil and internal components ensures all Ashley-Edison (UK) Variable Transformers deliver a low operating torque.

##### ✓ Trouble Free Mechanical Construction for Long Life

All Ashley-Edison (UK) variable transformers are designed for heavy-duty and trouble free operation.

Built to exacting mechanical tolerances, using the finest materials available, the quality of design and build ensures minimal maintenance requirements and enhanced design life.

##### ✓ Negligible Maintenance

When operated in accordance with the operating instructions, the only component that may require periodic inspection and occasional replacement are the brushes. As the brushes are made of a special highly durable carbon and the design ensures proper contact with the commutator at all times, the need for replacement is infrequent.

##### ✓ Straight forward Installation & Use

Whether for bench use or panel mounting, installation, mounting and use is designed to be easy. Terminals are easily accessible - screw or lug. Output, on manually operated variable transformers, is controlled by either clockwise or anti-clockwise knob rotation.

##### ✓ International Standards Compliance & CE Conformity

All Ashley-Edison variable transformers are designed and manufactured to comply with all relevant International Standards and appropriate European Union CE Directives.

#### Typical Applications

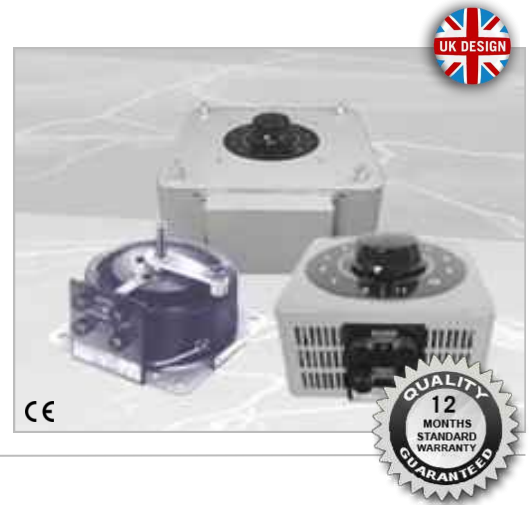
- Quality Control Testing
- Test Benches
- Furnace Transformers
- Electronic Equipment Burn-In
- Lighting Dimmers
- DC Rectifiers
- Low Voltage Performance Evaluation
- High Voltage Test Sets

**SINGLE PHASE - MANUAL AC VARIABLE TRANSFORMERS - 220 to 240V**

**AE-HB SERIES**

Manually operated 220V to 240V single phase variable transformers from 3 to 100 amps - delivering an efficient and trouble free method of varying AC voltages with an output from zero to 117% of line voltage.

Supplied as standard in IP20 (NEMA 1 style) enclosures with terminal covers, the casings can easily be removed for 'Open' style and panel mount applications.



**AE-HB SERIES - Model Selection**

Amps	AE Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D (mm)	Weight (kgs)
<b>3</b> Amps	AE-203-HB	220V	0.77	0 to 257V	164 x 150 x 210	6
		230V	0.80	0 to 269V		
		240V	0.84	0 to 280V		
<b>5</b> Amps	AE-205-HB	220V	1.2	0 to 257V	164 x 150 x 210	7
		230V	1.3	0 to 269V		
		240V	1.4	0 to 280V		
<b>10</b> Amps	AE-210-HB	220V	2.5	0 to 257V	215 x 160 x 260	11
		230V	2.6	0 to 269V		
		240V	2.8	0 to 280V		
<b>15</b> Amps	AE-215-HB	220V	3.8	0 to 257V	215 x 160 x 260	13
		230V	4.0	0 to 269V		
		240V	4.2	0 to 280V		
<b>20</b> Amps	AE-220-HB	220V	5.1	0 to 257V	300 x 225 x 345	19
		230V	5.3	0 to 269V		
		240V	5.6	0 to 280V		
<b>25</b> Amps	AE-225-HB	220V	6.4	0 to 257V	300 x 225 x 345	23
		230V	6.7	0 to 269V		
		240V	7.0	0 to 280V		
<b>30</b> Amps	AE-230-HB	220V	7.7	0 to 257V	300 x 255 x 345	24
		230V	8.0	0 to 269V		
		240V	8.4	0 to 280V		
<b>35</b> Amps	AE-235-HB	220V	9.0	0 to 257V	300 x 225 x 345	26
		230V	9.3	0 to 269V		
		240V	9.8	0 to 280V		
<b>40</b> Amps	AE-240-HB	220V	10.2	0 to 257V	370 x 260 x 425	34
		230V	10.72	0 to 269V		
		240V	11.0	0 to 280V		
<b>50</b> Amps	AE-2252-HB	220V	12.8	0 to 257V	370 x 260 x 425	47
		230V	13.4	0 to 269V		
		240V	14.0	0 to 280V		
<b>60</b> Amps	AE-2302-HB	220V	15.4	0 to 257V	300 x 460 x 420	52
		230V	16.0	0 to 269V		
		240V	16.8	0 to 280V		
<b>80</b> Amps	AE-2402-HB	220V	20.5	0 to 257V	370 x 600 x 490	70
		230V	21.4	0 to 269V		
		240V	22.4	0 to 280V		
<b>100</b> Amps	AE-2502-HB	220V	25.7	0 to 257V	370 x 600 x 490	76
		230V	26.9	0 to 269V		
		240V	28.0	0 to 280V		



**Technical Specification**

<b>Input Voltage:</b>	+6% of nominal (ie. 240V models are continuously rated at 254V)
<b>Output Voltage:</b>	Continuously variable from 0 to 117% of input voltage
<b>Frequency:</b>	47 to 60Hz
<b>Power Factor:</b>	Any
<b>Efficiency:</b>	98%
<b>Surge Rating:</b>	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
<b>Environment:</b>	Temperature range -15 to 45°C. Derate by 2% for each additional °C up to a max of 60°C. Suitable for indoor tropical use up to 95% RH (non-condensing). Maximum altitude 1000m. Derate by 2.5% for each additional 500m.
<b>CE Conformity:</b>	<b>CE Marked</b> - compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009).
<b>RoHS:</b>	Fully RoHS compliant
<b>Compliance:</b>	BS EN 61558-1:2005 + A1:2009 & BS EN 61558-2-13:2009
<b>Warranty:</b>	1 Year / 12 months from date of supply

**Notes:**

**Safety Caution:**



When using variable transformers, installation and connection must be carried out in accordance with relevant safety standards and care must be taken to ensure local regulations are strictly adhered to. When utilised as components in other systems, the variable transformers must never be used without suitable safety protection being in place.

**Typical Applications:**

Quality Control Testing, Low Voltage Performance Evaluation, Electronic Equipment Burn-In, Furnace Transformers, Test Benches, Lighting Dimmers, High Voltage Test Sets & DC Rectifiers.

Other voltage configurations available to order.



**TAILORED VARIABLE TRANSFORMER SOLUTIONS**  
SINGLE & THREE PHASE

**Cost Efficient Tailored Solutions**  
to your exact requirements

Ashley-Edison (UK) has been a leading manufacturer of variable auto transformers for over 20 years, building standard as well as custom-designed products for industrial, commercial and military applications.

If our standard models do not meet your specific requirements, contact us. Our engineering staff are always available to solve your specific application requirements. With our extensive portfolio of proven designs, often it just requires a minor revision to an existing design, enabling us to be able to offer you a cost-efficient solution to your precise requirements.



**Extended Voltage Options**

Our standard variable auto transformers are rated for

Model:	Single Phase	Three Phase (3 & 4 Wire)
H Series	220 to 240V	380 to 415V
		440 to 480V
L Series	110 to 120V	190 to 208V

In addition we are able to offer, on individual request, solutions for other nominal input voltages and configurations, including 440V & 480V three phase and applications where the output voltage is required to be able to go as high as 1000V.

**Typical Examples**

<b>Model:</b>	<b>AE-3210-HB-X480</b>
	9 kVA Three Phase Variable Transformer
Input:	480V Three Phase 3 Wire 50/60Hz
Output:	0 to 562V Three Phase 3 Wire 50/60Hz
Rating:	10 Amps per Phase

<b>Model:</b>	<b>MAE-32353-HB-X415/600</b>
	77 kVA Three Phase Motorised Variable Transformer
Input:	415V Three Phase 4 Wire 50/60Hz
Output:	0 to 600V Three Phase 3 Wire 50/60Hz
Rating:	75 Amps per Phase

<b>Model:</b>	<b>AE-3220-HB-DM-X480/1000</b>
	10 Amp Three Phase Manually Operated Variable Transformer
Input:	480V Three Phase 50/60Hz
Output:	0 to 1000V Three Phase 50/60Hz
Rating:	10 Amps per Phase

**Other Power Solutions**  
available from Ashley-Edison (UK)

**AC Voltage Stabilisers / Regulators & Power Conditioners**



Provide protection against fluctuations and vagaries of the utility mains supply and enhance the power quality of the businesses and organisations they protect.

**AC Constant Voltage Compensators**



Compensates for voltage drops inherent in long cable runs, allowing substantial savings to be made on electrical power cable costs.

**VOLTSTREAM AC Voltage Optimisers (AVOs)**



Delivers reductions in energy usage by optimising the electricity supply voltage, enabling energy cost savings and reductions in carbon emissions.

Want to learn more about the Power Protection Solutions available from Ashley-Edison (UK)?

Check us out online at . . . . .

**The Universal AC Power Source**

**Voltage & Frequency Conversion**

**IDEAL FOR USE IN TESTING CENTRES, RESEARCH LABS AND TESTING ON PRODUCTION LINES**

**FCL** Static Variable Output Single & Three Phase Voltage & Frequency Converters utilise the latest in solid state Pulse Width Modulated (PWM) Inverter and Rectifier technology, combined with Galvanic Isolation, to deliver a clean and regulated variable AC power supply - ideal for use in testing centres, research laboratories and for testing on production lines.

