AC Variable Transformers

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

Sinalda's Setavolt™ 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 800 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.

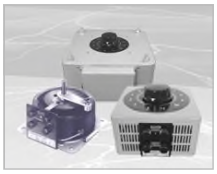
Typical uses include quality control testing, electronic equipment burn-in, low voltage performance evaluation, DC rectifier / regulator analysis or other industrial and engineering applications.

Our endurable 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 -

SA 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

SA 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

mSA 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

iSA SERIES - THREE PHASE

Three Phase oil immersed motorized induction variable transformers from 150 to 800 amps

H Models	- 380V to 415V	> Page 16

setavolt™

Manual & Motorised

AC Variable Transformer

Single & Three Phase

3 to over 800 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**

NB: 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.

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, Setavolt™ 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.

CE

Design Features

High Efficiency & Excellent Regulation

In contrast to current hungry rheostats and other resistive type voltage controllers, Setavolt™ 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, Setavolt™ 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 Setavolt™ Variable Transformers deliver a low operating torque.

Trouble Free Mechanical Construction for Long Life

All Setavolt™ 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 endurable 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 Setavolt™ variable transformers are designed and manufactured to comply with all relevant International Standards and appropriate European Union CE Directives.

Typical Applications

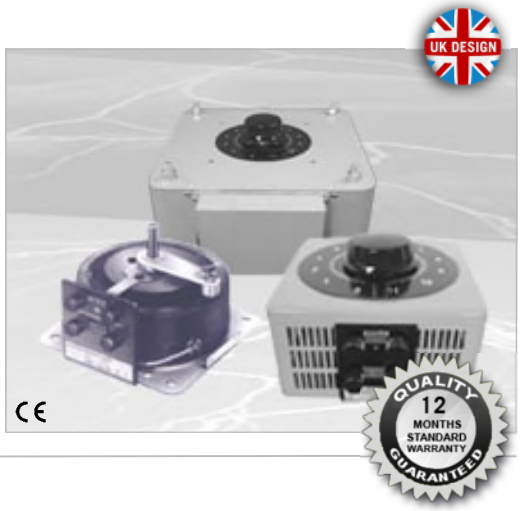
- Quality Control Testing
- Electronic Equipment Burn-In
- Low Voltage Performance Evaluation
- Test Benches
- Lighting Dimmers
- High Voltage Test Sets
- Furnace Transformers
- DC Rectifiers

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

SA-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.



SA-HB SERIES - Model Selection

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

Other voltage configurations available to order.

Technical Specification	
Input Voltage:	+6% of nominal (ie. 240V models are continuously rated at 254V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
CE Conformity:	**CE Marked** - compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009).
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	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:

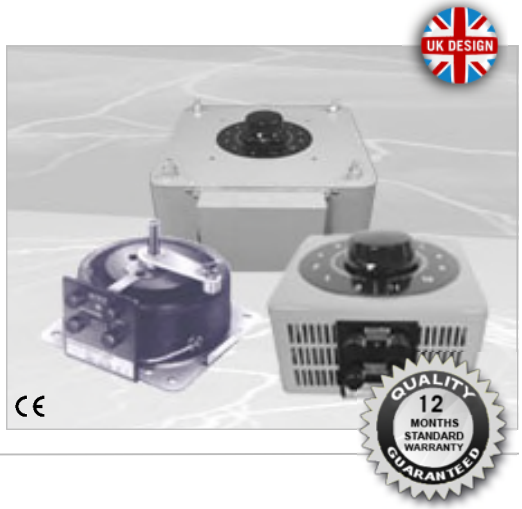
Quality Control Testing, Low Voltage Performance Evaluation, Electronic Equipment Burn-In, Furnace Transformers, Test Benches, Lighting Dimmers, High Voltage Test Sets & DC Rectifiers.

SINGLE PHASE - MANUAL AC VARIABLE TRANSFORMERS - 110 to 120V

SA-LB SERIES

Manually operated 110V to 120V single phase variable transformers from 3 to 80 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.



SA-LB SERIES - Model Selection Chart

Amps	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D mm	Weight kgs
3 Amps	SA-103-LB	110V	0.38	0 to 129V	164 x 150 x 210	4.8
		115V	0.40	0 to 134V		
		120V	0.42	0 to 140V		
5 Amps	SA-105-LB	110V	0.64	0 to 129V	164 x 150 x 210	5
		115V	0.67	0 to 134V		
		120V	0.70	0 to 140V		
10 Amps	SA-110-LB	110V	1.2	0 to 129V	164 x 150 x 210	6.5
		115V	1.3	0 to 134V		
		120V	1.4	0 to 140V		
15 Amps	SA-115-LB	110V	1.9	0 to 129V	215 x 160 x 260	10
		115V	2.0	0 to 134V		
		120V	2.1	0 to 140V		
20 Amps	SA-120-LB	110V	2.5	0 to 129V	215 x 160 x 260	11.5
		115V	2.6	0 to 134V		
		120V	2.8	0 to 140V		
25 Amps	SA-125-LB	110V	3.2	0 to 129V	215 x 160 x 260	13
		115V	3.3	0 to 134V		
		120V	3.5	0 to 140V		
30 Amps	SA-130-LB	110V	3.8	0 to 129V	300 x 225 x 345	21
		115V	4.0	0 to 134V		
		120V	4.2	0 to 140V		
35 Amps	SA-135-LB	110V	4.5	0 to 129V	300 x 225 x 345	23
		115V	4.6	0 to 134V		
		120V	4.9	0 to 140V		
40 Amps	SA-140-LB	110V	5.1	0 to 129V	300 x 225 x 345	25
		115V	5.3	0 to 134V		
		120V	5.6	0 to 140V		
50 Amps	SA-150-LB	110V	6.4	0 to 129V	370 x 260 x 425	35
		115V	6.7	0 to 134V		
		120V	7.0	0 to 140V		
60 Amps	SA-1302-LB	110V	7.7	0 to 129V	300 x 375 x 400	43
		115V	8.0	0 to 134V		
		120V	8.4	0 to 140V		
80 Amps	SA-1402-LB	110V	10.3	0 to 129V	300 x 455 x 400	51
		115V	10.7	0 to 134V		
		120V	11.2	0 to 140V		

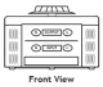
Other voltage configurations available to order.

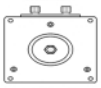
SA-103 to 125

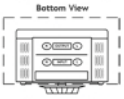

'Open' Style


'Enclosed' Casing


Panel Mount


Front View


Bottom View


Panel Mount View

SA-130 to 140-LB


'Enclosed' Casing

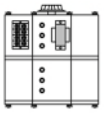

With Casing Terminal Cover

SA-150-LB


'Enclosed' Casing


With Casing Terminal Cover

SA-1302 to 1402-LB



CE

Technical Specification	
Input Voltage:	+6% of nominal (ie. 120V models are continuously rated at 127V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
CE Conformity:	**CE Marked** - compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009).
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	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:

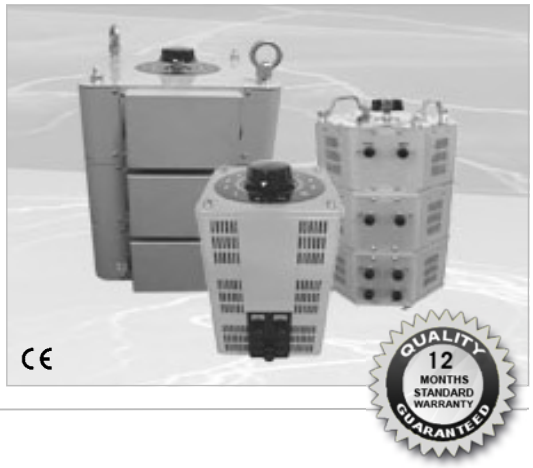
Quality Control Testing, Low Voltage Performance Evaluation, Electronic Equipment Burn-In, Furnace Transformers, Test Benches, Lighting Dimmers, High Voltage Test Sets & DC Rectifiers.

THREE PHASE - MANUAL AC VARIABLE TRANSFORMERS - 380 to 415V

SA-HB SERIES

Manually operated 380V to 415V three phase variable transformers from 3 to 60 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 applications.



SA-HB SERIES - Model Selection Chart

Amps per Phase	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D (mm)	Weight (kgs)
3 Amps	SA-3203-HB	380V	2.3	0 to 445V		
		400V	2.4	0 to 468V	164 x 390 x 210	18
		415V	2.5	0 to 485V		
5 Amps	SA-3205-HB	380V	3.9	0 to 445V		
		400V	4.1	0 to 468V	164 x 390 x 210	20
		415V	4.2	0 to 485V		
10 Amps	SA-3210-HB	380V	7.7	0 to 445V		
		400V	8.1	0 to 468V	215 x 390 x 260	30
		415V	8.4	0 to 485V		
15 Amps	SA-3215-HB	380V	11.6	0 to 445V		
		400V	12.2	0 to 468V	240 x 480 x 285	38
		415V	12.6	0 to 485V		
20 Amps	SA-3220-HB	380V	15.4	0 to 445V		
		400V	16.2	0 to 468V	300 x 500 x 345	54
		415V	16.8	0 to 485V		
25 Amps	SA-3225-HB	380V	19.3	0 to 445V		
		400V	20.3	0 to 468V	300 x 500 x 345	65
		415V	21.0	0 to 485V		
30 Amps	SA-3230-HB	380V	23.1	0 to 445V		
		400V	24.3	0 to 468V	300 x 500 x 345	72
		415V	25.2	0 to 485V		
35 Amps	SA-3235-HB	380V	27.0	0 to 445V		
		400V	28.4	0 to 468V	300 x 500 x 345	75
		415V	29.4	0 to 485V		
40 Amps	SA-3240-HB	380V	30.8	0 to 445V		
		400V	32.4	0 to 468V	370 x 560 x 425	100
		415V	33.5	0 to 485V		
50 Amps	SA-32252-HB	380V	38.6	0 to 445V		
		400V	40.6	0 to 468V	300x 920 x 400	142
		415V	42.0	0 to 485V		
60 Amps	SA-32302-HB	380V	46.3	0 to 445V		
		400V	48.6	0 to 468V	300 x 920 x 400	150
		415V	50.4	0 to 485V		

SA-3203 to 3215-HB

SA-3220 to 3235-HB

SA-3240-HB

With Casing Terminal Covers

For 440V, 460V & 480V see SA-HB-480 SERIES data sheet. Other voltage configurations available to special order.

For larger ratings please refer to our mSA-HB-DM-CB SERIES motorised variable transformer range.

Technical Specification

Input Voltage:	+6% of nominal (ie. 415V models are continuously rated at 439V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
CE Conformity:	**CE Marked** - compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009).
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	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.

THREE PHASE - MANUAL AC VARIABLE TRANSFORMERS - 440 to 480V

SA-HB-480 SERIES

Manually operated 440V to 480V three phase variable transformers from 3 to 60 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 applications.

SA-HB-480 SERIES - Model Selection

Amps per Phase	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D (mm)	Weight (kgs)
3 Amps	SA-3203-HB-480	440V	2.7	0 to 515V		
		460V	2.8	0 to 538V	164 x 390 x 210	20
		480V	2.9	0 to 562V		
5 Amps	SA-3205-HB-480	440V	4.5	0 to 515V		
		460V	4.7	0 to 538V	215 x 390 x 260	27
		480V	4.9	0 to 562V		
10 Amps	SA-3210-HB-480	440V	8.9	0 to 515V		
		460V	9.3	0 to 538V	215 x 390 x 260	38
		480V	9.7	0 to 562V		
15 Amps	SA-3215-HB-480	440V	13.4	0 to 515V		
		460V	14.0	0 to 538V	240 x 480 x 285	43
		480V	14.6	0 to 562V		
20 Amps	SA-3220-HB-480	440V	17.8	0 to 515V		
		460V	18.6	0 to 538V	300 x 500 x 345	65
		480V	19.5	0 to 562V		
25 Amps	SA-3225-HB-480	440V	22.3	0 to 515V		
		460V	23.3	0 to 538V	300 x 500 x 345	78
		480V	24.3	0 to 562V		
30 Amps	SA-3230-HB-480	440V	26.8	0 to 515V		
		460V	28.0	0 to 538V	300 x 620 x 345	95
		480V	29.2	0 to 562V		
35 Amps	SA-3235-HB-480	440V	31.2	0 to 515V		
		460V	32.6	0 to 538V	370 x 560 x 425	105
		480V	34.1	0 to 562V		
40 Amps	SA-3240-HB-480	440V	35.7	0 to 515V		
		460V	37.3	0 to 538V	370 x 560 x 425	115
		480V	38.9	0 to 562V		
50 Amps	SA-32252-HB-480	440V	44.6	0 to 515V		
		460V	46.6	0 to 538V	300 x 920 x 400	160
		480V	48.7	0 to 562V		
60 Amps	SA-32302-HB-480	440V	53.5	0 to 515V		
		460V	55.9	0 to 538V	370 x 1100 x 500	200
		480V	58.4	0 to 562V		

SA-3203 to 3215-HB

SA-3220 to 3235-HB

SA-3240-HB

With Casing Terminal Covers

For larger ratings please refer to our **mSA-HB-DM-CB SERIES motorised variable transformer range.**

Technical Specification	
Input Voltage:	+6% of nominal (ie. 480V models are continuously rated at 508V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
CE Conformity:	**CE Marked** - compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009).
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	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.

THREE PHASE - MANUAL AC VARIABLE TRANSFORMERS - 190 to 208V

SA-LB SERIES

Manually operated 190 to 208V three phase variable transformers from 3 to 60 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 applications.

SA-LB SERIES - Model Selection

Amps per Phase	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D mm	Weight kgs
3 Amps	SA-3103-LB	190V	1.15	0 to 222V		
		200V	1.22	0 to 234V	164 x 390 x 210	15.5
		208V	1.26	0 to 243V		
5 Amps	SA-3105-LB	190V	1.9	0 to 222V		
		200V	2.0	0 to 234V	164 x 390 x 210	16
		208V	2.1	0 to 243V		
10 Amps	SA-3110-LB	190V	3.8	0 to 222V		
		200V	4.0	0 to 234V	164 x 390 x 210	20
		208V	4.2	0 to 243V		
15 Amps	SA-3115-LB	190V	5.7	0 to 222V		
		200V	6.0	0 to 234V	215 x 390 x 260	30
		208V	6.3	0 to 243V		
20 Amps	SA-3120-LB	190V	7.6	0 to 222V		
		200V	8.1	0 to 234V	240 x 480 x 285	37
		208V	8.4	0 to 243V		
25 Amps	SA-3125-LB	190V	9.6	0 to 222V		
		200V	10.1	0 to 234V	240 x 480 x 285	41
		208V	10.5	0 to 243V		
30 Amps	SA-3130-LB	190V	11.5	0 to 222V		
		200V	12.1	0 to 234V	300 x 500 x 345	65
		208V	12.6	0 to 243V		
35 Amps	SA-3135-LB	190V	13.4	0 to 222V		
		200V	14.1	0 to 234V	300 x 620 x 345	69
		208V	14.7	0 to 243V		
40 Amps	SA-3140-LB	190V	15.3	0 to 222V		
		200V	16.2	0 to 234V	300 x 620 x 345	75
		208V	16.8	0 to 243V		
50 Amps	SA-3150-LB	190V	19.2	0 to 222V		
		200V	20.2	0 to 234V	370 x 560 x 425	100
		208V	21.0	0 to 243V		
60 Amps	SA-31302-LB	190V	23.0	0 to 222V		
		200V	24.3	0 to 234V	300 x 920 x 400	136
		208V	25.2	0 to 243V		

SA-3103 to 3120-LB

SA-3125 to 3140-LB

SA-3150-LB

With Casing Terminal Covers

CE

For 440V, 460V & 480V see SA-HB-480 SERIES data sheet. Other voltage configurations available to special order.

For larger ratings please refer to our mSA-LB-DM-CB SERIES motorised variable transformer range.

Technical Specification	
Input Voltage:	+6% of nominal (ie. 208V models are continuously rated at 220V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
CE Conformity:	**CE Marked** - compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009).
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	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.

THREE PHASE - MANUAL AC VARIABLE TRANSFORMERS - 380 to 415V

With Digital Metering & Input Circuit Breaker Protection

SA-HB-DM-CB SERIES

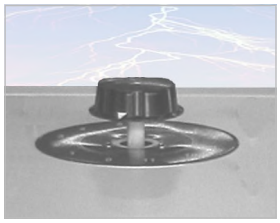
Manually operated 380V to 415V three phase variable transformers, from 10 to 60 amps - delivering an efficient and trouble free method of varying AC voltages with an output from zero to 117% of line voltage.

Supplied as standard in IP20 (NEMA 1 style) enclosures on castors, with digital metering and input circuit breaker protection.

SA-HB-DM-CB SERIES - Model Selection

Amps per Phase	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D (mm)	Weight (kgs)
10 Amps	SA-3210-HB-DM-CB	380V	7.7	0 to 445V	500 x 600 x 600	115
		400V	8.1	0 to 468V		
		415V	8.4	0 to 485V		
15 Amps	SA-3215-HB-DM-CB	380V	11.6	0 to 445V	500 x 600 x 600	125
		400V	12.2	0 to 468V		
		415V	12.6	0 to 485V		
20 Amps	SA-3220-HB-DM-CB	380V	15.4	0 to 445V	500 x 680 x 600	130
		400V	16.2	0 to 468V		
		415V	16.8	0 to 485V		
25 Amps	SA-3225-HB-DM-CB	380V	19.3	0 to 445V	500 x 680 x 600	140
		400V	20.3	0 to 468V		
		415V	21.0	0 to 485V		
30 Amps	SA-3230-HB-DM-CB	380V	23.1	0 to 445V	500 x 680 x 600	145
		400V	24.3	0 to 468V		
		415V	25.2	0 to 485V		
35 Amps	SA-3235-HB-DM-CB	380V	27.0	0 to 445V	600 x 680 x 700	165
		400V	28.4	0 to 468V		
		415V	29.4	0 to 485V		
40 Amps	SA-3240-HB-DM-CB	380V	30.8	0 to 445V	600 x 680 x 700	185
		400V	32.4	0 to 468V		
		415V	33.6	0 to 485V		
50 Amps	SA-32252-HB-DM-CB	380V	38.6	0 to 445V	Available on Request	
		400V	40.6	0 to 468V		
		415V	42.0	0 to 485V		
60 Amps	SA-32302-HB-DM-CB	380V	46.3	0 to 445V	Available on Request	
		400V	48.6	0 to 468V		
		415V	50.4	0 to 485V		

Digital Output Voltmeter & Ammeter with phase selector switches



Manual operation—clockwise or anti-clockwise knob rotation to increase or lower output volts

For motorised solutions please check-out our mSA-HB-DM-CB SERIES variable transformers.

Other voltage configurations, as well as smaller & larger ratings, available to special order.

Technical Specification

Input Voltage:	+6% of nominal (ie. 415V models are continuously rated at 439V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
Construction	Enclosures to IP20 (NEMA 1) BS EN5490 / IEC 60529.
Standard Feature	Input Circuit Breaker Output Terminal Block Digital Voltmeter/Ammeter/Selector Switch Freestanding Enclosure on Casters
Option Accessories	Output Circuit Breaker Input Voltage Stabiliser Industrial Output Socket
Options:	Motorised Operation see **mSA-HB-DM-CB SERIES** datasheet
CE Conformity:	**CE Marked** - being fully compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009)
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	1 Year / 12 months from date of supply

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.

THREE PHASE - MANUAL AC VARIABLE TRANSFORMERS - 440 to 480V

With Digital Metering & Input Circuit Breaker Protection

SA-HB-DM-CB-480 SERIES

Manually operated 440V to 480V three phase variable transformers, from 10 to 40 amps - delivering an efficient and trouble free method of varying AC voltages with an output from zero to 117% of line voltage.

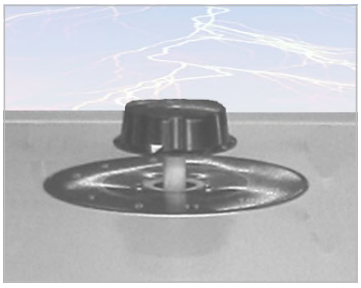
Supplied as standard in IP20 (NEMA 1 style) enclosures on castors, with digital metering and input circuit breaker protection.

SA-HB-DM-CB-480 SERIES - Model Selection

Amps per Phase	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D (mm)	Weight (kgs)
10 Amps	SA-3210-HB-DM-CB-480	440V	8.9	0 to 515V	Available on Request	
		460V	9.3	0 to 538V		
		480V	9.7	0 to 562V		
15 Amps	SA-3215-HB-DM-CB-480	440V	13.4	0 to 515V	Available on Request	
		460V	14.0	0 to 538V		
		480V	14.8	0 to 562V		
20 Amps	SA-3220-HB-DM-CB-480	440V	17.8	0 to 515V	Available on Request	
		460V	18.6	0 to 538V		
		480V	19.5	0 to 562V		
25 Amps	SA-3225-HB-DM-CB-480	440V	22.3	0 to 515V	Available on Request	
		460V	23.3	0 to 538V		
		480V	24.3	0 to 562V		
30 Amps	SA-3230-HB-DM-CB-480	440V	26.8	0 to 515V	Available on Request	
		460V	28.0	0 to 538V		
		480V	29.2	0 to 562V		
35 Amps	SA-3235-HB-DM-CB-480	440V	31.2	0 to 515V	Available on Request	
		460V	32.6	0 to 538V		
		480V	34.1	0 to 562V		
40 Amps	SA-3240-HB-DM-CB-480	440V	35.7	0 to 515V	Available on Request	
		460V	37.3	0 to 538V		
		480V	38.9	0 to 562V		

Other voltage configurations, as well as smaller & larger ratings, available to special order.

Digital Output Voltmeter & Ammeter with phase selector switches



Manual operation—clockwise or anti-clockwise knob rotation to increase or lower output volts

For motorised solutions please check-out our mSA-HB-DM-CB-480 SERIES variable transformers.

Technical Specification	
Input Voltage:	+6% of nominal (ie. 480V models are continuously rated at 508V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
Construction	Enclosures to IP20 (NEMA 1) BS EN5490 / IEC 60529.
Standard Feature	Input Circuit Breaker Output Terminal Block Digital Voltmeter/Ammeter/Selector Switch Freestanding Enclosure on Casters
Option Accessories	Output Circuit Breaker Input Voltage Stabiliser Industrial Output Socket
Options:	Motorised Operation see mSA-HB-DM-CB SERIES datasheet
CE Conformity:	**CE Marked** - being fully compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009)
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	1 Year / 12 months from date of supply

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.

THREE PHASE - MANUAL AC VARIABLE TRANSFORMERS - 190 to 208V

With Digital Metering & Input Circuit Breaker Protection

SA-LB-DM-CB SERIES

Manually operated 190V to 208V three phase variable transformers, from 10 to over 40 amps - delivering an efficient and trouble free method of varying AC voltages with an output from zero to 117% of line voltage.

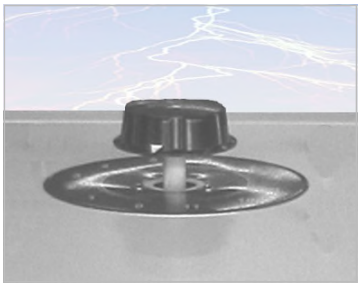
Supplied as standard in IP20 (NEMA 1 style) enclosures on castors, with digital metering and input circuit breaker protection.

AE-LB-DM-CB SERIES - Model Selection

Amps per Phase	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D mm	Weight kgs
10 Amps	SA-3110-LB-DM-CB	190V	3.8	0 to 222V	400 x 520 x 400	45
		200V	4.0	0 to 234V		
		208V	4.2	0 to 243V		
15 Amps	SA-3115-LB-DM-CB	190V	5.7	0 to 222V	500 x 520 x 500	65
		200V	6.0	0 to 234V		
		208V	6.3	0 to 243V		
20 Amps	SA-3120-LB-DM-CB	190V	7.6	0 to 222V	500 x 600 x 500	70
		200V	8.1	0 to 234V		
		208V	8.4	0 to 243V		
25 Amps	SA-3125-LB-DM-CB	190V	9.6	0 to 222V	500 x 600 x 500	78
		200V	10.1	0 to 234V		
		208V	10.5	0 to 243V		
30 Amps	SA-3130-LB-DM-CB	190V	11.5	0 to 222V	500 x 650 x 600	100
		200V	12.1	0 to 234V		
		208V	12.6	0 to 243V		
35 Amps	SA-3135-LB-DM-CB	190V	13.4	0 to 222V	500 x 700 x 600	120
		200V	14.1	0 to 234V		
		208V	14.7	0 to 243V		
40 Amps	SA-3140-LB-DM-CB	190V	15.3	0 to 222V	500 x 700 x 600	130
		200V	16.2	0 to 234V		
		208V	16.8	0 to 243V		

Other voltage configurations, as well as smaller and larger ratings, available to special order.

Digital Output Voltmeter & Ammeter with phase selector switches



Manual operation—clockwise or anti-clockwise knob rotation to increase or lower output volts

For motorised solutions please check-out our MAE-LB-DM-CB SERIES variable transformers.

Technical Specification	
Input Voltage:	+6% of nominal (ie. 208V models are continuously rated at 220V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
Construction	Enclosures to IP20 (NEMA 1) BS EN5490 / IEC 60529.
Standard Feature	Input Circuit Breaker Output Terminal Block Digital Voltmeter/Ammeter/Selector Switch Freestanding Enclosure on Castors
Option Accessories	Output Circuit Breaker Input Voltage Stabiliser Industrial Output Socket
Options:	Motorised Operation see mSA-LB-DM-CB SERIES datasheet
CE Conformity:	**CE Marked** - being fully compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	1 Year / 12 months from date of supply

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.

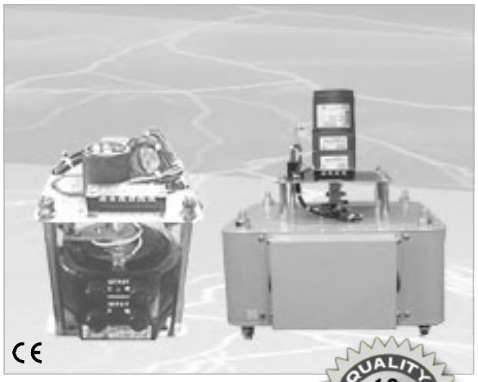
SINGLE PHASE - MOTORISED AC VARIABLE TRANSFORMERS - 220 to 240V

mSA-HO SERIES

Motorised 220V to 240V single phase variable transformer assemblies, from 3 to over 80 amps - delivering an efficient and trouble free method of varying AC voltages with an output from zero to 117% of line voltage.

Presented as 'Open' style motorised variable transformer assemblies, with the compact motor drive mounted on top of the variable transformer, the systems are presented uncased. In such formats, mSA models are ideal for incorporation as component assemblies in OEM style systems.

mSA-HB SERIES variable transformers. Standalone solutions are also available, on special request, in IP20 (NEMA 1 style) enclosures, with digital metering, up / down push buttons for output voltage selection and input circuit breaker protection.



QUALITY 12 MONTHS STANDARD WARRANTY GUARANTEED

mSA-HO SERIES - Model Selection

Amps	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D (mm)	Weight (kgs)
3 Amps	mSA-203-HO	220V	0.77	0 to 257V		
		230V	0.80	0 to 269V	164 x 290 x 210	9
		240V	0.84	0 to 280V		
5 Amps	mSA-205-HO	220V	1.2	0 to 257V		
		230V	1.3	0 to 269V	164 x 290 x 210	10
		240V	1.4	0 to 280V		
10 Amps	mSA-210-HO	220V	2.5	0 to 257V		
		230V	2.6	0 to 269V	215 x 300 x 260	14
		240V	2.8	0 to 280V		
15 Amps	mSA-215-HO	220V	3.8	0 to 257V		
		230V	4.0	0 to 269V	215 x 300 x 260	16
		240V	4.2	0 to 280V		
20 Amps	mSA-220-HO	220V	5.1	0 to 257V		
		230V	5.3	0 to 269V	300 x 420 x 345	26
		240V	5.6	0 to 280V		
25 Amps	mSA-225-HO	220V	6.4	0 to 257V		
		230V	6.7	0 to 269V	300 x 460 x 345	30
		240V	7.0	0 to 280V		
30 Amps	mSA-230-HO	220V	7.7	0 to 257V		
		230V	8.0	0 to 269V	300 x 460 x 345	33
		240V	8.4	0 to 280V		
35 Amps	mSA-235-HO	220V	9.0	0 to 257V		
		230V	9.3	0 to 269V	300 x 440 x 425	37
		240V	9.8	0 to 280V		
40 Amps	mSA-240-HO	220V	10.2	0 to 257V		
		230V	10.72	0 to 269V	370 x 420 x 425	39
		240V	11.0	0 to 280V		
50 Amps	mSA-2252-HO	220V	12.8	0 to 257V		
		230V	13.4	0 to 269V	300 x 530 x 400	50
		240V	14.0	0 to 280V		
60 Amps	mSA-2302-HO	220V	15.4	0 to 257V		
		230V	16.0	0 to 269V	300 x 530 x 400	54
		240V	16.8	0 to 280V		
80 Amps	mSA-2402-HO	220V	20.5	0 to 257V		
		230V	21.4	0 to 269V	370 x 580 x 490	75
		240V	22.4	0 to 280V		

mSA-203 to 215-HO

mSA-220 to 235-HO

mSA-240-HO

With Casing Terminal Covers

mSA-2402-HO

CE

Other voltage configurations and larger ratings available to order.

For motorised Three Phase solutions please check-out our **mSA-HB-DM-CB SERIES** variable transformers.

Technical Specification

Input Voltage:	+6% of nominal (ie. 240V models are continuously rated at 254V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
Options:	**mSA-HB** fully cased IP20 (NEMA 1 Style) solutions with - Digital Metering (DM) - Input Circuit Breaker (CB)) - Push Button Voltage Selection
CE Conformity:	**CE Marked** - being fully compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009)
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	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.

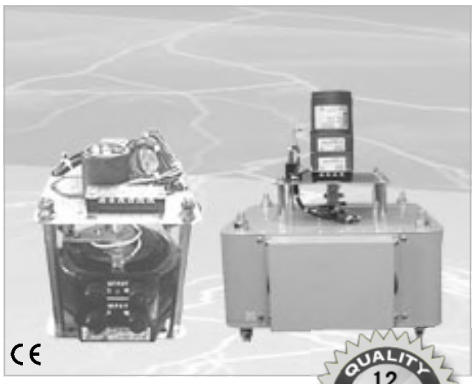
SINGLE PHASE - MOTORISED AC VARIABLE TRANSFORMERS - 110 to 120V

mSA-LO SERIES

Motorised 110V to 120V single phase variable transformer assemblies, from 3 to over 80 amps - delivering an efficient and trouble free method of varying AC voltages with an output from zero to 117% of line voltage.

Presented as 'Open' style motorised variable transformer assemblies, with the compact motor drive mounted on top of the variable transformer, the systems are presented uncased. In such formats, mSA models are ideal for incorporation as component assemblies in OEM style systems.

mSA-LB SERIES variable transformers. Standalone solutions are also available, on special request, in IP20 (NEMA 1 style) enclosures, with digital metering, up / down push buttons for output voltage selection and input circuit breaker protection.



mSA-LO SERIES - Model Selection

Amps	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D mm	Weight kgs
3 Amps	mSA-103-LO	110V	0.38	0 to 129V		
		115V	0.40	0 to 134V	Available on Request	
		120V	0.42	0 to 140V		
5 Amps	mSA-105-LO	110V	0.64	0 to 129V		
		115V	0.67	0 to 134V	Available on Request	
		120V	0.70	0 to 140V		
10 Amps	mSA-110-LO	110V	1.2	0 to 129V		
		115V	1.3	0 to 134V	Available on Request	
		120V	1.4	0 to 140V		
15 Amps	mSA-115-LO	110V	1.9	0 to 129V		
		115V	2.0	0 to 134V	Available on Request	
		120V	2.1	0 to 140V		
20 Amps	mSA-120-LO	110V	2.5	0 to 129V		
		115V	2.6	0 to 134V	Available on Request	
		120V	2.8	0 to 140V		
25 Amps	mSA-125-LO	110V	3.2	0 to 129V		
		115V	3.3	0 to 134V	Available on Request	
		120V	3.5	0 to 140V		
30 Amps	mSA-130-LO	110V	3.8	0 to 129V		
		115V	4.0	0 to 134V	Available on Request	
		120V	4.2	0 to 140V		
35 Amps	mSA-135-LO	110V	4.5	0 to 129V		
		115V	4.6	0 to 134V	Available on Request	
		120V	4.9	0 to 140V		
40 Amps	mSA-140-LO	110V	5.1	0 to 129V		
		115V	5.3	0 to 134V	Available on Request	
		120V	5.6	0 to 140V		
50 Amps	mSA-150-LO	110V	6.4	0 to 129V		
		115V	6.7	0 to 134V	Available on Request	
		120V	7.0	0 to 140V		
60 Amps	mSA-1302-LO	110V	7.7	0 to 129V		
		115V	8.0	0 to 134V	Available on Request	
		120V	8.4	0 to 140V		
80 Amps	mSA-1402-LO	110V	10.3	0 to 129V		
		115V	10.7	0 to 134V	Available on Request	
		120V	11.2	0 to 140V		

mSA-103 to 125-LO

mSA-130 to 140-LO

mSA-150-LO

With Casing
Terminal Covers

CE

Other voltage configurations and larger ratings available to order.
For motorised Three Phase solutions please check-out our mSA-LB-DM-CB SERIES variable transformers.

Technical Specification

Input Voltage:	+6% of nominal (ie. 120V models are continuously rated at 127V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
Options:	**mSA-LB** fully cased IP20 (NEMA 1 Style) solutions with - Digital Metering (DM) - Input Circuit Breaker (CB)) - Push Button Voltage Selection
CE Conformity:	**CE Marked** - being fully compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009)
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	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.

THREE PHASE - MOTORISED AC VARIABLE TRANSFORMERS - 380 to 415V

With Digital Metering & Input Circuit Breaker Protection

mSA-HB-DM-CB SERIES

Motorised 380V to 415V three phase variable transformers, from 10 to over 150 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 on castors, with digital voltmeter and ammeter, up / down push buttons for output voltage selection and input circuit breaker protection. Uncased **mSA-HO** models available to special order.

mSA-HB-DM-CB SERIES - Model Selection

Amps per Phase	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D (mm)	Weight (kgs)
10 Amps	mSA-3210-HB-DM-CB	380V	7.7	0 to 445V	500 x 800 x 600	120
		400V	8.1	0 to 468V		
		415V	8.4	0 to 485V		
15 Amps	mSA-3215-HB-DM-CB	380V	11.6	0 to 445V	500 x 850 x 600	130
		400V	12.2	0 to 468V		
		415V	12.6	0 to 485V		
20 Amps	mSA-3220-HB-DM-CB	380V	15.4	0 to 445V	500 x 850 x 600	135
		400V	16.2	0 to 468V		
		415V	16.8	0 to 485V		
25 Amps	mSA-3225-HB-DM-CB	380V	19.3	0 to 445V	500 x 850 x 600	145
		400V	20.3	0 to 468V		
		415V	21.0	0 to 485V		
30 Amps	mSA-3230-HB-DM-CB	380V	23.1	0 to 445V	500 x 850 x 600	150
		400V	24.3	0 to 468V		
		415V	25.2	0 to 485V		
35 Amps	mSA-3235-HB-DM-CB	380V	27.0	0 to 445V	600 x 880 x 700	170
		400V	28.4	0 to 468V		
		415V	29.4	0 to 485V		
40 Amps	mSA-3240-HB-DM-CB	380V	30.8	0 to 445V	600 x 880 x 700	190
		400V	24.3	0 to 468V		
		415V	25.2	0 to 485V		
50 Amps	mSA-32252-HB-DM-CB	380V	38.6	0 to 445V	600 x 1400 x 600	270
		400V	40.6	0 to 468V		
		415V	42.0	0 to 485V		
60 Amps	mSA-32302-HB-DM-CB	380V	46.3	0 to 445V	600 x 1400 x 600	280
		400V	48.6	0 to 468V		
		415V	50.4	0 to 485V		
70 Amps	mSA-32352-HB-DM-CB	380V	54.0	0 to 445V	600 x 1350 x 700	300
		400V	56.7	0 to 468V		
		415V	58.8	0 to 485V		
80 Amps	mSA-32402-HB-DM-CB	380V	61.6	0 to 445V	600 x 1350 x 700	320
		400V	64.8	0 to 468V		
		415V	67.2	0 to 485V		
105 Amps	mSA-32353-HB-DM-CB	380V	80.9	0 to 445V	750 x 1400 x 1500	500
		400V	85.1	0 to 468V		
		415V	88.2	0 to 485V		
120 Amps	mSA-32403-HB-DM-CB	380V	92.5	0 to 445V	750 x 1400 x 1500	540
		400V	97.2	0 to 468V		
		415V	100.8	0 to 485V		
150 Amps	mSA-32503-HB-DM-CB	380V	115.6	0 to 445V	750 x 1400 x 1500	600
		400V	121.6	0 to 468V		
		415V	126.0	0 to 485V		

440V, 460V, 480V and other voltage configurations, as well as larger ratings, available to special order.

Technical Specification

Input Voltage:	+6% of nominal (ie. 415V models are continuously rated at 439V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
Construction:	Enclosures to IP20 (NEMA 1) BS EN5490 / IEC 60529.
Standard Features:	Input Circuit Breaker Output Terminal Block Digital Voltmeter/Ammeter/Selector Switch UP/Down Push Button Voltage Selection Freestanding Enclosure on Casters
Option Accessories:	Output Circuit Breaker Industrial Output Socket
CE Conformity:	**CE Marked** - being fully compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009)
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	1 Year / 12 months from date of supply

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.

THREE PHASE - MOTORISED AC VARIABLE TRANSFORMERS - 440 to 480V

With Digital Metering & Input Circuit Breaker Protection

mSA-HB-DM-CB-480 SERIES

Motorised 440V to 480V three phase variable transformers, from 10 to over 150 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 on castors, with digital voltmeter and ammeter, up / down push buttons for output voltage selection and input circuit breaker protection. Uncased **mSA-HO** models available to special order.

mSA-HB-DM-CB SERIES - Model Selection

Amps per Phase	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D (mm)	Weight (kgs)
10 Amps	mSA-3210-HB-DM-CB-480	440V	8.9	0 to 515V	500 x 850 x 500	71
		460V	9.3	0 to 538V		
		480V	9.7	0 to 562V		
15 Amps	mSA-3215-HB-DM-CB-480	440V	13.4	0 to 515V	500 x 850 x 500	76
		460V	14.0	0 to 538V		
		480V	14.6	0 to 562V		
20 Amps	mSA-3220-HB-DM-CB-480	440V	17.8	0 to 515V	500 x 850 x 600	92
		460V	18.6	0 to 538V		
		480V	19.5	0 to 562V		
25 Amps	mSA-3225-HB-DM-CB-480	440V	22.3	0 to 515V	500 x 850 x 600	104
		460V	23.3	0 to 538V		
		480V	24.3	0 to 562V		
30 Amps	mSA-3230-HB-DM-CB-480	440V	26.8	0 to 515V	500 x 850 x 600	111
		460V	28.0	0 to 538V		
		480V	29.2	0 to 562V		
35 Amps	mSA-3235-HB-DM-CB-480	440V	31.2	0 to 515V	500 x 850 x 600	114
		460V	32.6	0 to 538V		
		480V	34.1	0 to 562V		
40 Amps	mSA-3240-HB-DM-CB-480	440V	35.7	0 to 515V	600 x 900 x 700	180
		460V	37.3	0 to 538V		
		480V	38.9	0 to 562V		
50 Amps	mSA-32252-HB-DM-CB-480	440V	44.6	0 to 515V	600 x 1300 x 600	206
		460V	46.6	0 to 538V		
		480V	48.7	0 to 562V		
60 Amps	mSA-32302-HB-DM-CB-480	440V	53.5	0 to 515V	600 x 1300 x 600	226
		460V	55.9	0 to 538V		
		480V	58.4	0 to 562V		
70 Amps	mSA-32352-HB-DM-CB-480	440V	62.4	0 to 515V	600 x 1350 x 600	235
		460V	65.2	0 to 538V		
		480V	68.1	0 to 562V		
80 Amps	mSA-32402-HB-DM-CB-480	440V	71.4	0 to 515V	600 x 1350 x 700	300
		460V	74.5	0 to 538V		
		480V	77.9	0 to 562V		
105 Amps	mSA-32353-HB-DM-CB-480	440V	93.7	0 to 515V	600 x 1400 x 1300	430
		460V	97.8	0 to 538V		
		480V	102.2	0 to 562V		
120 Amps	mSA-32403-HB-DM-CB-480	440V	107.0	0 to 515V	750 x 1400 x 1500	500
		460V	111.8	0 to 538V		
		480V	116.8	0 to 562V		

Other voltage configurations and larger ratings available to order.

Technical Specification

Input Voltage:	+6% of nominal (ie. 480V models are continuously rated at 508V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
Construction:	Enclosures to IP20 (NEMA 1) BS EN5490 / IEC 60529.
Standard Features:	Input Circuit Breaker Output Terminal Block Digital Voltmeter/Ammeter/Selector Switch UP/Down Push Button Voltage Selection Freestanding Enclosure on Casters
Option Accessories:	Output Circuit Breaker Industrial Output Socket
CE Conformity:	**CE Marked** - being fully compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009)
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	1 Year / 12 months from date of supply

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.

THREE PHASE - MOTORISED AC VARIABLE TRANSFORMERS - 190 to 208V

With Digital Metering & Input Circuit Breaker Protection

mSA-LB-DM-CB SERIES

Motorised 190V to 208V three phase variable transformers, from 10 to over 120 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 on castors, with digital voltmeter and ammeter, up / down push buttons for output voltage selection and input circuit breaker protection.

Uncased **mSA-LO** models available to order.

mSA-LB-DM-CB SERIES - Model Selection

Amps per Phase	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D mm	Weight kgs
10 Amps	mSA-3110-LB-DM-CB	190V	3.8	0 to 222V	400 x 750 x 400	53
		200V	4.0	0 to 234V		
		208V	4.2	0 to 243V		
15 Amps	mSA-3115-LB-DM-CB	190V	5.7	0 to 222V	500 x 750 x 500	73
		200V	6.0	0 to 234V		
		208V	6.3	0 to 243V		
20 Amps	mSA-3120-LB-DM-CB	190V	7.6	0 to 222V	500 x 850 x 500	79
		200V	8.1	0 to 234V		
		208V	8.4	0 to 243V		
25 Amps	mSA-3125-LB-DM-CB	190V	9.6	0 to 222V	500 x 850 x 500	85
		200V	10.1	0 to 234V		
		208V	10.5	0 to 243V		
30 Amps	mSA-3130-LB-DM-CB	190V	11.5	0 to 222V	500 x 850 x 600	125
		200V	12.1	0 to 234V		
		208V	12.6	0 to 243V		
35 Amps	mSA-3135-LB-DM-CB	190V	13.4	0 to 222V	500 x 850 x 600	135
		200V	14.1	0 to 234V		
		208V	14.7	0 to 243V		
40 Amps	mSA-3140-LB-DM-CB	190V	15.3	0 to 222V	500 x 850 x 600	145
		200V	16.2	0 to 234V		
		208V	16.8	0 to 243V		
50 Amps	mSA-3150-LB-DM-CB	190V	19.2	0 to 222V	600 x 900 x 700	170
		200V	20.2	0 to 234V		
		208V	21.0	0 to 243V		
60 Amps	mSA-31302-LB-DM-CB	190V	23.0	0 to 222V	600 x 1300 x 600	230
		200V	24.3	0 to 234V		
		208V	25.2	0 to 243V		
70 Amps	mSA-31352-LB-DM-CB	190V	26.9	0 to 222V	600 x 1300 x 600	240
		200V	28.3	0 to 234V		
		208V	29.4	0 to 243V		
80 Amps	mSA-31402-LB-DM-CB	190V	30.7	0 to 222V	600 x 1450 x 600	255
		200V	32.4	0 to 234V		
		208V	33.6	0 to 243V		
105 Amps	mSA-31353-LB-DM-CB	190V	40.3	0 to 222V	600 x 1350 x 700	300
		200V	42.5	0 to 234V		
		208V	44.2	0 to 243V		
120 Amps	mSA-31403-LB-DM-CB	190V	46.1	0 to 222V	600 x 1400 x 1300	450
		200V	48.6	0 to 234V		
		208V	50.5	0 to 243V		
150 Amps	mSA-31404-LB-DM-CB	190V	57.6	0 to 222V	700 x 1520 x 1200	930
		200V	60.7	0 to 234V		
		208V	63.1	0 to 243V		

Other voltage configurations and larger ratings available to order.

Technical Specification	
Input Voltage:	+6% of nominal (ie. 208V models are continuously rated at 220V)
Output Voltage:	Continuously variable from 0 to 117% of input voltage
Frequency:	47 to 60Hz
Power Factor:	Any
Efficiency:	98%
Surge Rating:	10 x max. current rating for 1 second 3 x max. current rating for 60 seconds 2 x max. current rating for 5 minutes
Environment:	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.
Construction:	Enclosures to IP20 (NEMA 1) BS EN5490 / IEC 60529.
Standard Features:	Input Circuit Breaker Output Terminal Block Digital Voltmeter/Ammeter/Selector Switch UP/Down Push Button Castors
Option Accessories :	Output Circuit Breaker Output Industrial Socket
CE Conformity:	**CE Marked** - being fully compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009)
RoHS:	Fully RoHS compliant
Compliance:	BS EN 61558-1:2005 + AI:2009 & BS EN 61558-2-13:2009
Warranty:	1 Year / 12 months from date of supply

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.

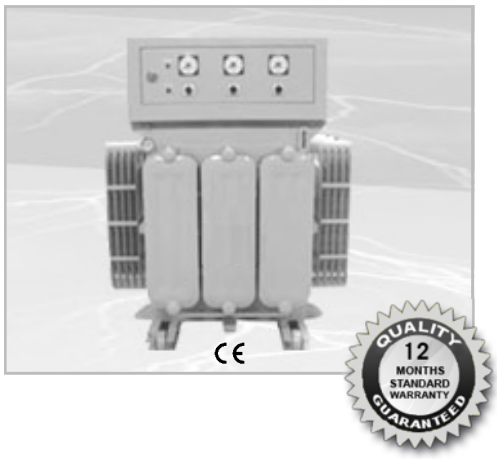
THREE PHASE - INDUSTRIAL - MANUAL & MOTORISED AC VARIABLE INDUCTION TRANSFORMERS

iSA-H SERIES

Magnetic Induction Brushless Design - ideal for the larger Industrial style applications

380 to 415V three phase input oil immersed induction manual & motor controlled variable transformers, delivering an output of 20V up to 600V *[1000V –X1000 Option].*

Supplied as standard in IP20 (NEMA 1 style) freestanding enclosures, with digital voltmeter and ammeter and up / down push buttons for output voltage selection, models can also be supplied as air cooled solutions *[-AC Option].*



iSA-H SERIES - Model Selection

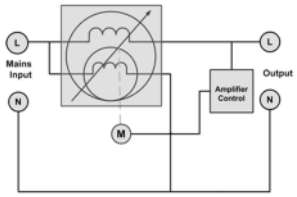
Amps per Phase	Setavolt Model	Nominal Volts AC	kVA @max output volts	Output Volts AC	Dimensions W x H x D mm	Weight kgs
150 Amps	iSA-150H-380	380V	156	20 to 600V	1300 x 1900 x 1300	2600 Kg
	iSA-150H-400	400V	156	20 to 600V		
	iSA-150H-415	415V	156	20 to 600V		
200 Amps	iSA-200H-380	380V	208	20 to 600V	1420 x 1900 x 1420	3400 Kg
	iSA-200H-400	400V	208	20 to 600V		
	iSA-200H-415	415V	208	20 to 600V		
300 Amps	iSA-300H-380	380V	312	20 to 600V	1510 x 1900 x 1510	3700 Kg
	iSA-300H-400	400V	312	20 to 600V		
	iSA-300H-415	415V	312	20 to 600V		
400 Amps	iSA-400H-380	380V	416	20 to 600V	1620 x 2000 x 1620	4000 Kg
	iSA-400H-400	400V	416	20 to 600V		
	iSA-400H-415	415V	416	20 to 600V		
500 Amps	iSA-500H-380	380V	520	20 to 600V	1620 x 2220 x 1620	4400 Kg
	iSA-500H-400	400V	520	20 to 600V		
	iSA-500H-415	415V	520	20 to 600V		
600 Amps	iSA-600H-380	380V	624	20 to 600V	1720 x 2220 x 1720	4700 Kg
	iSA-600H-400	400V	624	20 to 600V		
	iSA-600-H-415	415V	624	20 to 600V		
700 Amps	iSA-700H-415	380V	727	20 to 600V	1820 x 2320 x 1820	4950 Kg
	iSA-700H-415	400V	727	20 to 600V		
	iSA-700H-415	415V	727	20 to 600V		
800 Amps	iSA-800H-380	380V	831	20 to 600V	1910 x 2320 x 1910	5100 Kg
	iSA-800H-400	400V	831	20 to 600V		
	iSA-800H-415	415V	831	20 to 600V		

Other voltage configurations and larger ratings available to order.

NB: 1000V Output Models are designated as Model Nos **/1000** *[where the 1000 replaces the standard 600]* and offer a output voltage range of 30 to 1000V.

DESIGN PRINCIPLE

As a Magnetic Induction based solution, iSA Variable Transformers utilise a simple, yet highly reliable, rotor and stator design principle to increase or reduce the magnitude of the voltage in a series transformer winding, thereby allowing the output voltage to varied. The arrangement is similar to a motor, except that the rotor does not rotate continuously. Its maximum rotation is only 130 degrees. The magnetic coupling between the rotor (the shunt winding) and stator (series winding) will cause the magnitude of the voltage in the series winding to increase or decrease, depending on the angle or position of the rotor to the stator.



Technical Specification

Input Voltage:	380V or 400V or 415V Three Phase, 4 Wire *- Customer to Specify*
Output Voltage:	20 ~ 600V Adjustable *(No Load 20 ~ 720V) [Option - 30 ~ 1000V Adjustable]*
Frequency:	50Hz
Power Factor:	> 0.95
Efficiency:	≥ 98% @ Full Load
Overload Capability:	≤ 100% max. current rating continuous ≤ 150% max. current rating for 100 seconds ≤ 200% max. current rating for 10 seconds
Protection:	Up/Down Over Limit - c/w 2 Stage Protection for Auto-Shutdown Protection In the event of Up / Down limit failure auto shutdown Micro-Switch
No Load Wave-form Distortion:	< 3%
Insulation Level:	Class A
Cooling Type:	Oil Immersed [*Option - Air Cooled]*
Audible Noise:	< 65dBA at 1 meter
Environment:	Temperature range 0 to 40°C. Suitable for indoor tropical use up to 95% RH (non-condensing). Maximum altitude 1000m. .
Construction:	Enclosures to IP20 (NEMA 1 Style) BS EN5490 / IEC 60529.
Standard Feature	Digital Voltmeter/Ammeter/Selector Switch UP/Down Push Button & Push Button Con-troller with 3 mtrs cable cord.
CE Conformity:	**CE Marked** - being fully compliant with European Union Directives 2004/108/EC (replaced EMC Directive 89/336/EEC from July 2009)
Compliance:	BS 7452:1991 (IEC 60989:1991)
Warranty:	1 Year / 12 months from date of supply

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.

TAILORED VARIABLE TRANSFORMER SOLUTIONS

SINGLE & THREE PHASE

Cost Efficient Tailored Solutions

to your exact requirements

The team behind Sinalda UK have been manufacturing variable auto transformers for over 40 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

Model:	SA-201-HB-CB-X1000 (240V)
	1 kVA Single Phase Variable Transformer
Input:	240V Single Phase 2 Wire 50/60Hz
Output:	0 to 1000V Single Phase 2 Wire 50/60Hz
Rating:	1 Amp

Model:	mSA-32353-HB-X600 (415V)
	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

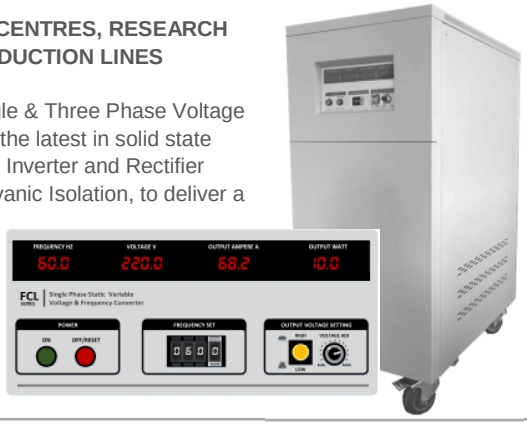
Model:	iSA-200H-X485-AC (415V)
	168 kVA Three Phase Industrial Air Cooled Variable Induction Transformer
Input:	415V Three Phase 50/60Hz
Output:	**20 to 485V** Three Phase 50/60Hz
Rating:	200 Amps per Phase

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.



Other Power Solutions

available from Sinalda (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 Volt Drop Compensators

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

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 Sinalda UK?

Check us out online at . . . . . .