



AEL-5000 Series

AC & DC Electronic Load

FEATURES

- Turbo Mode(Multiplier Mode) Can Withstand up to 2 Times the Rating Current and Power of the Electronic Load in a Short Period of Time
- Operating Mode: CC, linear CC, CR, CV, CP and AC Rectifier Loads
- Measurement Items: Voltage Value(Vrms, Vpeak, Vmax., Vmin), Current Value(Irms, Ipeak, Imax., Imin.), Watt Value, Volt-ampere Value(VA), Frequency Value, Crest Factor, Power Factor, Voltage Total Distortion(V THD, VH), Current Total Distortion(I THD, IH), Etc
- Eight Units Connected in Parallel up to 180 kW for Single-phase and 540 kW for Three-phase
- Support Loading and Unloading Angle Control, Loading and Unloading Angle Control Can be set at the Full Range of 0 to 359 Degrees
- Support Positive Half Cycle or Negative Half Cycle Load
- Support SCR/TRIAC Current Phase Modulation Waveform, 90 Degree Trailing Edge and Leading Edge
- Support the Capacitive Load(Irush Current)when the Power Supply is Turned on and the Transient Current(Surge Current)Test when the Load is Suddenly Connected(Hot Plug-in)During Operation
- Crest Factor Range: 1.414 to 5.0
- Power Factor Range: 0.1 to 1.0 Leading or Trailing
- Frequency Range: DC, 40 Hz to 440 Hz(AEL-5003-480-18.75/AEL-5004-480-28: DC, 40 Hz to 70 Hz),
- Optional Control Interfaces: GPIB, RS-232, USB, LAN

AEL-5000 Series



AEL-5002-350-18.75

AEL-5003-350-28

AEL-5004-350-37.5

AEL-5002-425-18.75

AEL-5003-425-28

AEL-5004-425-37.5

AEL-5003-480-18.75

AEL-5004-480-28

AEL-5006-350-56

AEL-5008-350-75

AEL-5006-425-56

AEL-5008-425-75

AEL-5012-350-112.5

AEL-5012-425-112.5

AEL-5015-350-112.5

AEL-5015-425-112.5

AEL-5019-350-112.5

AEL-5019-425-112.5

AEL-5023-350-112.5

AEL-5023-425-112.5



RS-232

GPIB

USB

LAN

MODEL	Power (W)		Current (Ampere)		Voltage (Volt)
	Turbo OFF	Turbo ON	Turbo OFF	Turbo ON	
AEL-5002-350-18.75	1875 W	3750 W (x2)*	18.75 Arms / 56.25 Apeak	37.5 Arms / 56.25 Apeak (x2)*	50 Vrms to 350 Vrms / 500 Vdc
AEL-5003-350-28	2800 W	5600 W (x2)*	28 Arms / 84 Apeak	56 Arms / 84 Apeak (x2)*	
AEL-5004-350-37.5	3750 W	7500 W (x2)*	37.5 Arms / 112.5 Apeak	75.0 Arms / 112.5 Apeak (x2)*	
AEL-5002-425-18.75	1875 W	3750 W (x2)*	1875 Arms / 56.25 Apeak	37.5 Arms / 56.25 Apeak (x2)*	50 Vrms to 425 Vrms / 600 Vdc
AEL-5003-425-28	2800 W	5600 W (x2)*	28 Arms / 84 Apeak	56 Arms / 84 Apeak (x2)*	
AEL-5004-425-37.5	3750 W	7500 W (x2)*	37.5 Arms / 112.5 Apeak	75.0 Arms / 112.5 Apeak (x2)*	
AEL-5006-350-56	5600 W	11200 W (x2)*	56.0 Arms / 168 Apeak	112.0 Arms / 168 Apeak (x2)*	50 Vrms to 350 Vrms / 500 Vdc
AEL-5008-350-75	7500 W	15000 W (x2)*	75.0 Arms / 225 Apeak	150.0 Arms / 225 Apeak (x2)*	
AEL-5012-350-112.5	11250 W	22500 W (x2)*	112.5 Arms / 337.5 Apeak	225 Arms / 337.5 Apeak (x2)*	
AEL-5015-350-112.5	15000 W	30000 W (x2)*	112.5 Arms / 337.5 Apeak	225 Arms / 337.5 Apeak (x2)*	50 Vrms to 425 Vrms / 600 Vdc
AEL-5019-350-112.5	18750 W	37500 W (x2)*	112.5 Arms / 337.5 Apeak	225 Arms / 337.5 Apeak (x2)*	
AEL-5023-350-112.5	22500 W	45000 W (x2)*	112.5 Arms / 337.5 Apeak	225 Arms / 337.5 Apeak (x2)*	
AEL-5006-425-56	5600 W	11200 W (x2)*	56.0 Arms / 168 Apeak	112.0 Arms / 168 Apeak (x2)*	50 Vrms to 480 Vrms / 700 Vdc
AEL-5008-425-75	7500 W	15000 W (x2)*	75.0 Arms / 225 Apeak	150.0 Arms / 225 Apeak (x2)*	
AEL-5012-425-112.5	11250 W	22500 W (x2)*	112.5 Arms / 337.5 Apeak	225 Arms / 337.5 Apeak (x2)*	
AEL-5015-425-112.5	15000 W	30000 W (x2)*	112.5 Arms / 337.5 Apeak	225 Arms / 337.5 Apeak (x2)*	50 Vrms to 480 Vrms / 700 Vdc
AEL-5019-425-112.5	18750 W	37500 W (x2)*	112.5 Arms / 337.5 Apeak	225 Arms / 337.5 Apeak (x2)*	
AEL-5023-425-112.5	22500 W	45000 W (x2)*	112.5 Arms / 337.5 Apeak	225 Arms / 337.5 Apeak (x2)*	
AEL-5003-480-18.75	2800 W	5600 W (x2)*	18.75 Arms / 56.25 Apeak	37.5 Arms / 56.25 Apeak (x2)*	50 Vrms to 480 Vrms / 700 Vdc
AEL-5004-480-28	3750 W	7500 W (x2)*	28 Arms / 84 Apeak	56 Arms / 84 Apeak (x2)*	

* Power and current boost rate of Turbo ON

AC & DC Electronic Load

FEATURES

- 4 digit V / A/W Meter , display the Voltage (Vrms, Vpeak, Vmax., Vmin) , Current (Irms, Ipeak, Imax., Imin.) , Watt, Voltampere (VA) , Frequency , Crest Factor , Power Factor , Total Harmonic Distortion of Voltage (VTHD), Voltage Harmonic (VH) , Total Harmonic Distortion of Current (ITHD), Current Harmonic (IH)
- CC, Linear CC, CR, CV, CP and AC Rectifier Load mode
- Crest factor range : 1.414 to 5.0
- Power factor (PF) range : 0 to 1 lead or (-1 to 0) lag
- Built-in function test modes include UPS Efficiency, PV Inverter Efficiency, UPS Back-up time, Battery Discharge time, UPS transfer time, Fuse/Breaker Trip/Non-Trip, Short circuit , OCP, OPP test modes
- Turbo mode is able to increase to 2 times the current and power of electronic load in a short period which is the most suitable for Fuse / Breaker test and short circuit, OCP, OPP test of AC power supply
- Time measurement can be applied to batteries, UPS, fuses and circuit breakers and other tests
- Support on-load boot; at first set Load ON to support on-load boot, inverter or uninterruptible power supply is turned on directly with the set load current, used to verify whether the starter is stable when the Inverter is connected
- Supports the loading and unloading angle control; the loading and unloading angle control, the full range of 0 to 359 degrees can be set to verify whether the Inverter output voltage transient response is stable when the actual electrical plugging and unplugging, and whether Overshoot/Ubershoot is within the allowable range
- Support positive half-cycle or negative half-cycle loading; used to verify whether the Inverter output voltage remains stable when the actual appliance has only positive half-cycle or negative half-cycle load current
- Supports SCR/TRIAC current phase modulation waveforms, 90 degree Trailing edge and Leading Edge
- Supports the Inrush Current of the inverter at startup and the Surge Current test when the load is suddenly plugged in (Hot Plug-in) during testing
- Frequency Range : DC, 40 Hz to 440 Hz
- Voltage and current monitoring
- Can be controlled by external voltage for CC, Linear CC, CR, CV, CP operating modes
- Protection against V, I, W, and °C
- Optional interface : GPIB , RS232 , USB , LAN
- The most complete measurement capabilities

AEL-5000 Series AC & DC electronic load built-in 16-bit A/D and DSP precision measurement circuit, provides accurate measurements, measurement items have Vrms, Arms, Watt, VA, CF, PF, THD, VTHD, ITHD, Ipeak, Amax, Amin, Vmax, and Vmin In addition to these measurement functions, it also provides time measurement, products such as UPS, fuses and circuit breakers etc. trip or blow time and transfer time for Off-line UPS

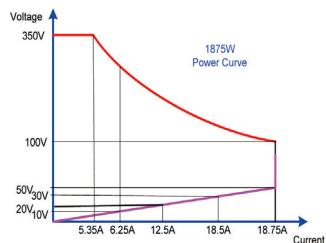
Rear Panel

AEL-5002-350-18.75	AEL-5006-350-56	AEL-5012-350-112.5	AEL-5015-350-112.5	AEL-5019-350-112.5	AEL-5023-350-112.5
AEL-5003-350-28	AEL-5008-350-75	AEL-5012-425-112.5	AEL-5015-425-112.5	AEL-5019-425-112.5	AEL-5023-425-112.5
AEL-5004-350-37.5	AEL-5006-425-56				
AEL-5002-425-18.75	AEL-5008-425-75				
AEL-5003-425-28					
AEL-5004-425-37.5					
AEL-5003-480-18.75					
AEL-5004-480-28					

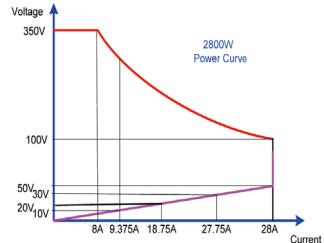


AC & DC Electronic Load

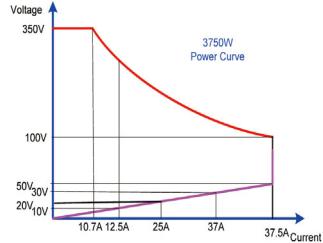
POWER CURVE



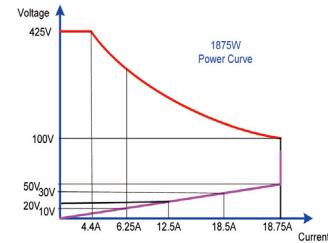
AEL-5002-350-18.75



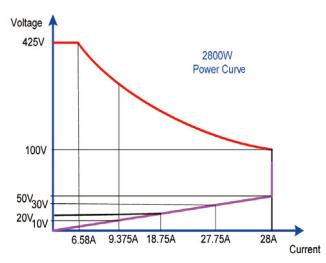
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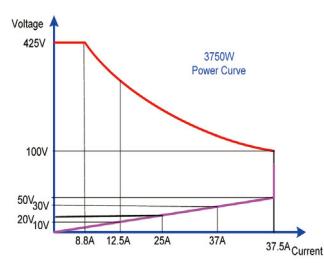
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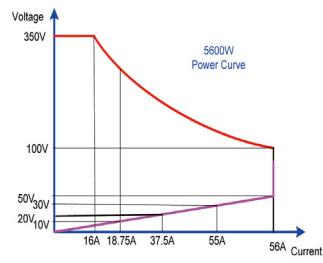
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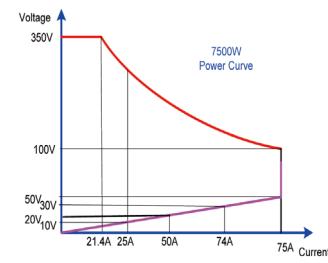
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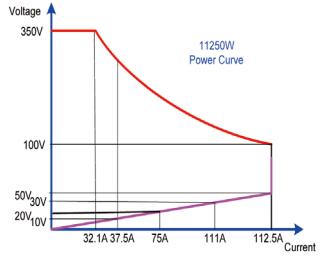
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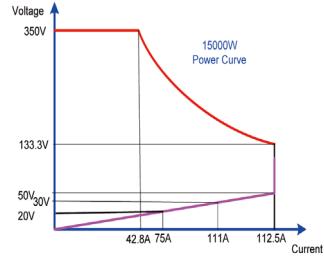
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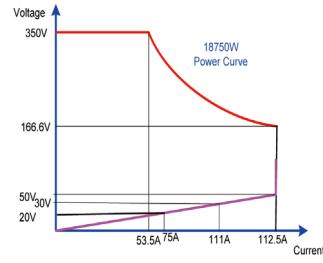
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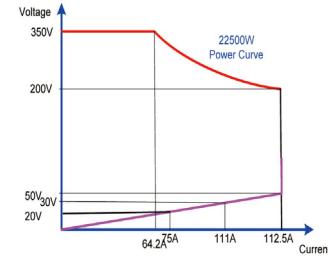
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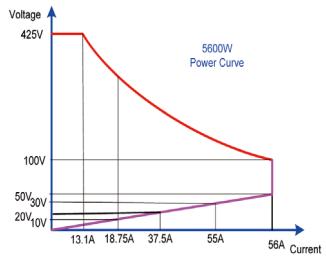
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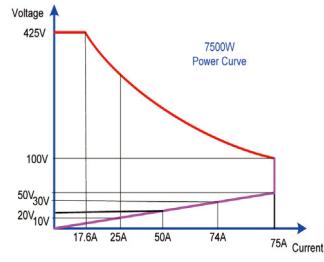
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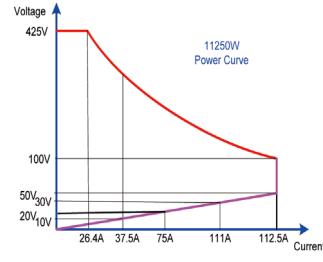
AEL-5023-350-112.5



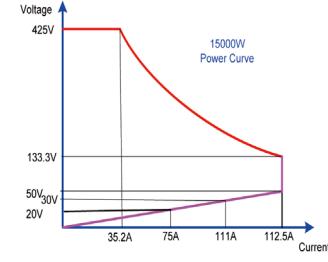
AEL-5006-425-56



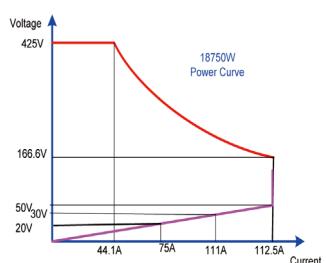
AEL-5008-425-75



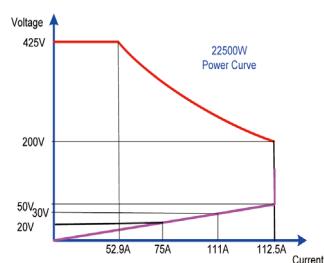
AEL-5012-425-112.5



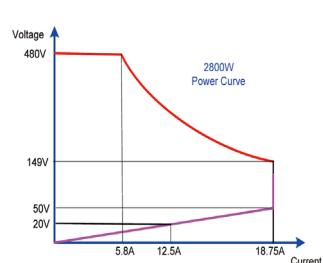
AEL-5015-425-112.5



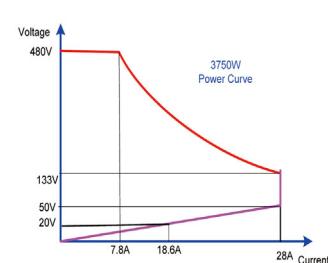
AEL-5019-425-112.5



AEL-5023-425-112.5



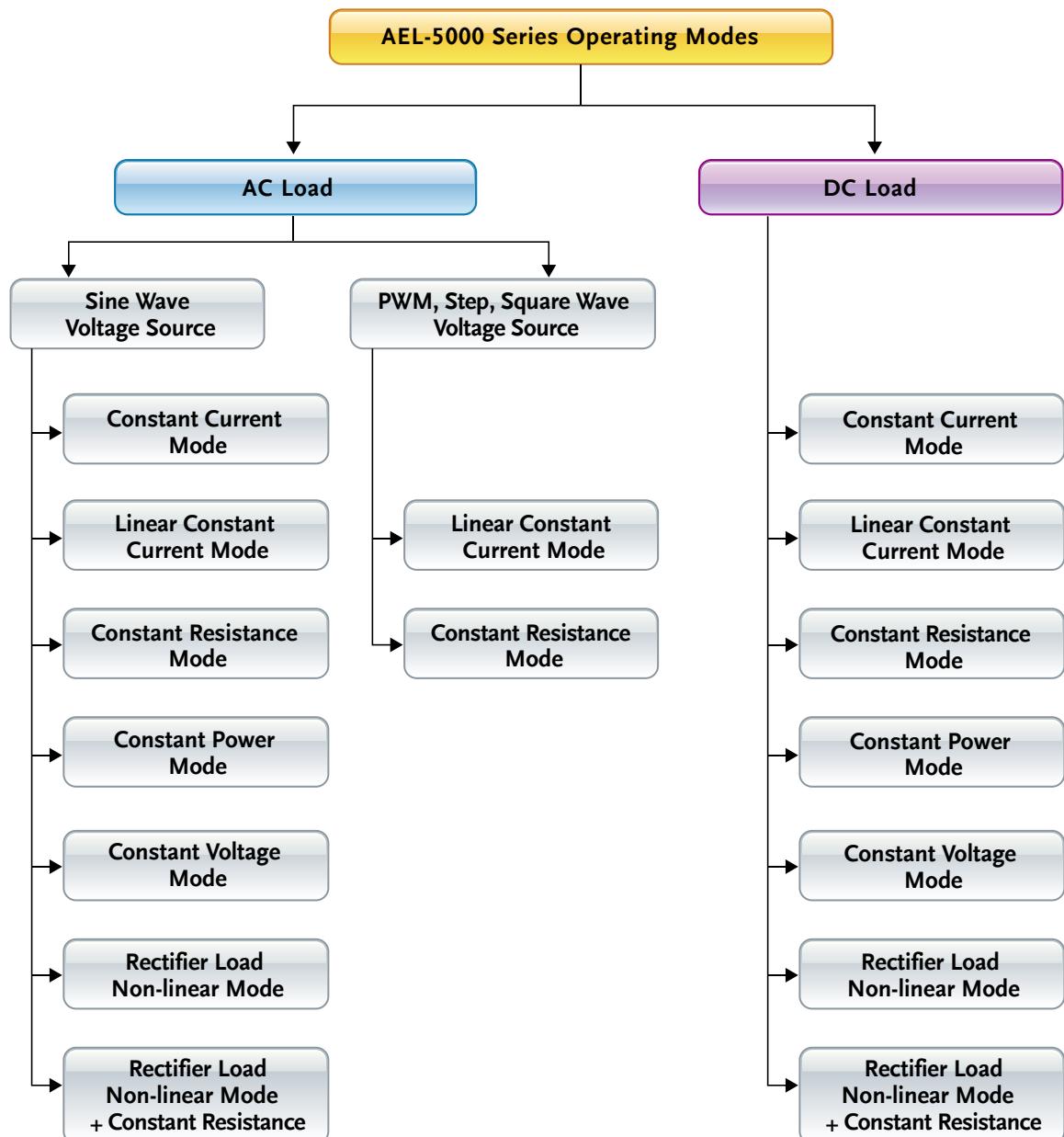
AEL-5003-480-18.75



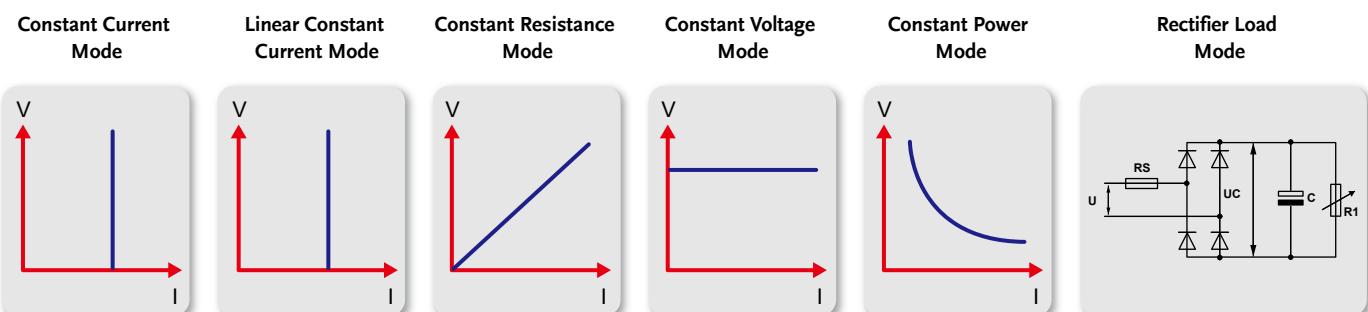
AEL-5004-480-28

AC & DC Electronic Load

COMPLETE AC AND DC LOAD MODES



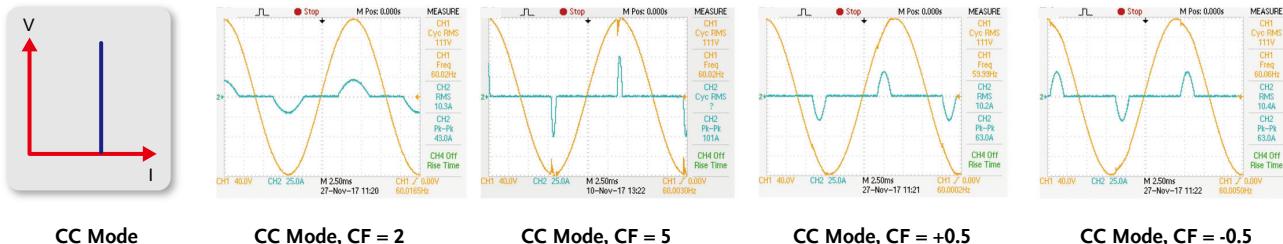
AC LOAD MODE



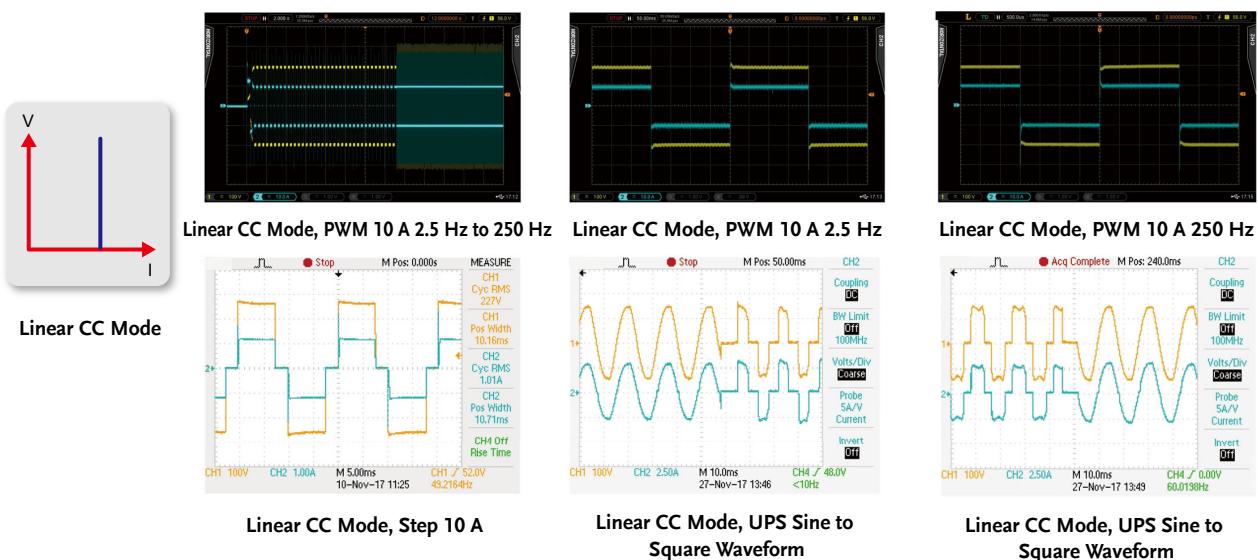
AC & DC Electronic Load

AC LOAD MODE

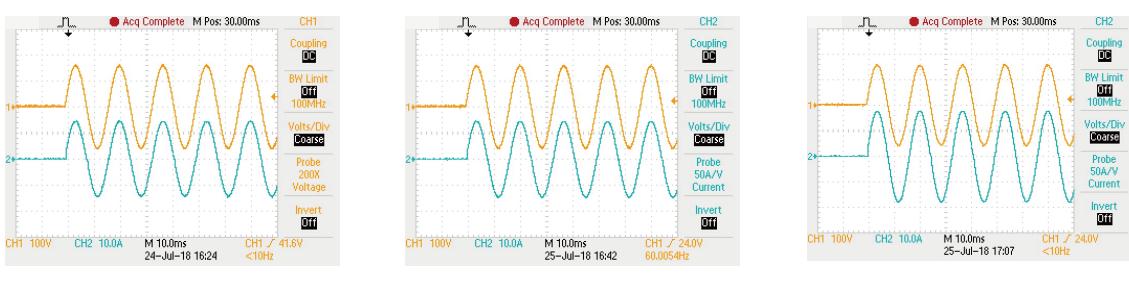
CC Mode : In the constant current mode of AC Load, can be applied to sine wave voltage source, providing CF, PF test of linear load.



Linear Constant Current Mode : Can be applied to sine wave and non-sine wave voltage source, as shown in the PWM inverter driver, step voltage source, and off-line UPS sine wave switch to square wave, square wave switch to sine wave.

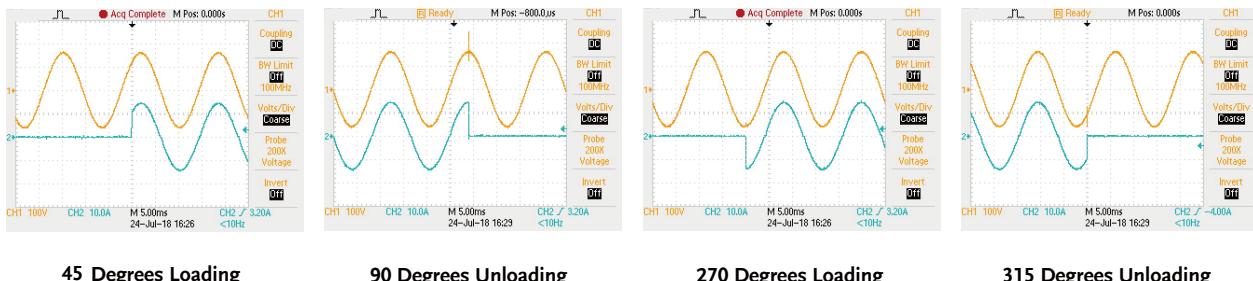


Supported on-load start-up : at first set Load ON to support on-load start-up, inverter or uninterruptible power supply is start-up directly with the set load current, used to verify whether the Inverter is stable when the load is connected during start-up.

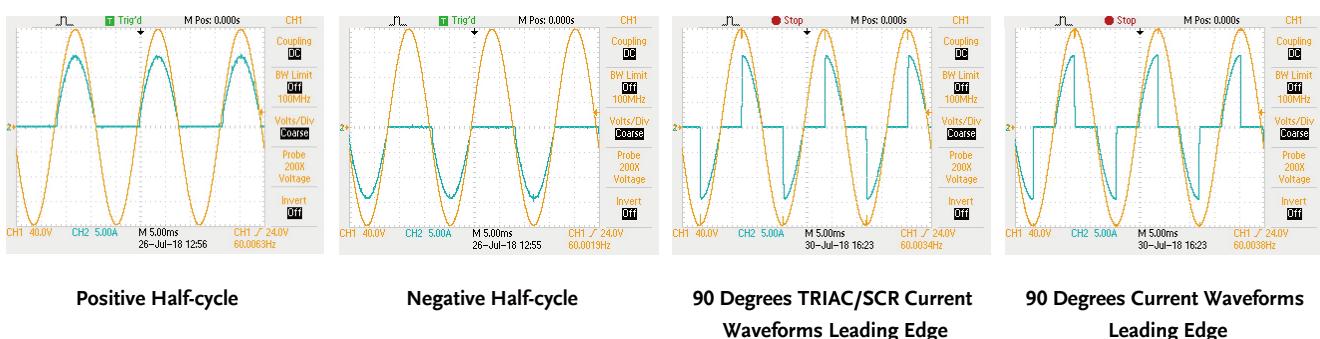


AC & DC Electronic Load

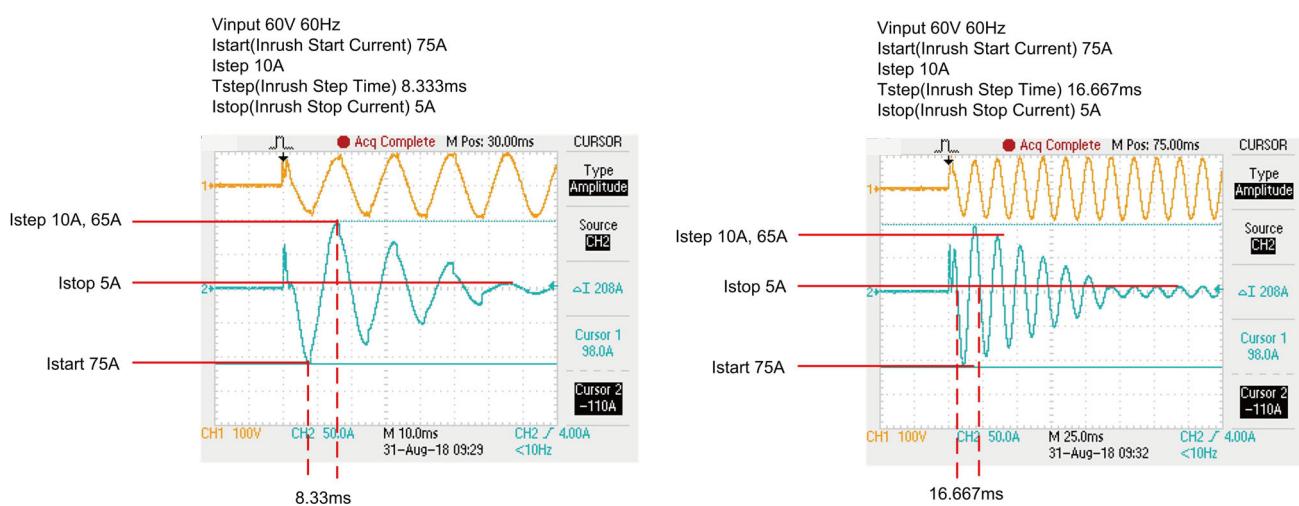
Supports the loading and unloading current angle control ; the loading and unloading current angle range of 0 to 359 degrees can be programmed to verify whether the Inverter output voltage transient response is stable during the actual electrical appliance is connected or turn ON/OFF randomly it can be used to verify the Overshoot/Uundershoot response is within the desire range.



Support positive half-cycle or negative half-cycle loading ; it can be used to verify whether the Inverter output voltage remains stable when the actual appliance has only positive half-cycle or negative half-cycle load current.

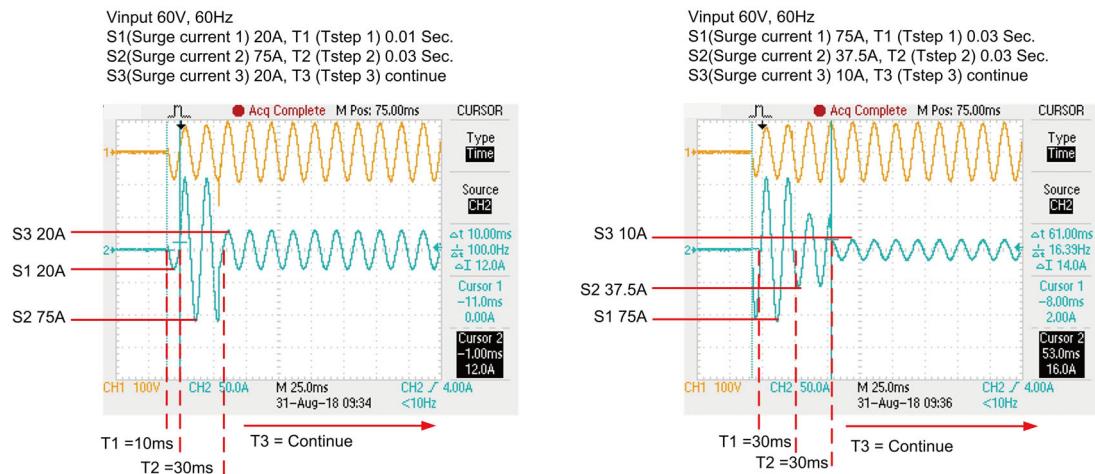


Support the Inrush Current of the inverter at startup and Power Plug-in test when the power supply is turned on to verify the Inrush Current and the sudden connection of the appliance when the power is turned on(Surge Current), to verify if whether the Inverter output voltage transient response is stable, as shown in the figure below.



Inrush Current Test at Boot

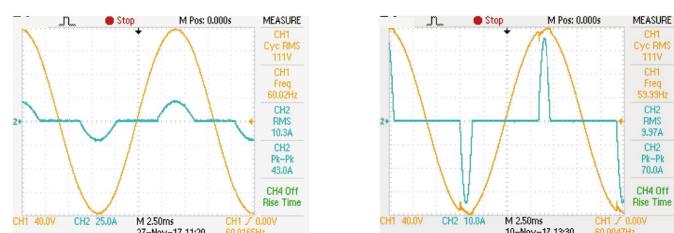
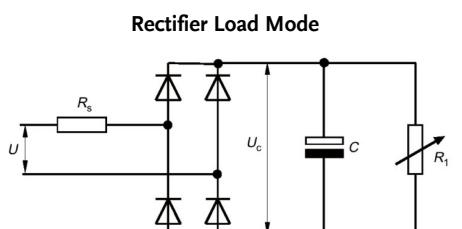
AC & DC Electronic Load



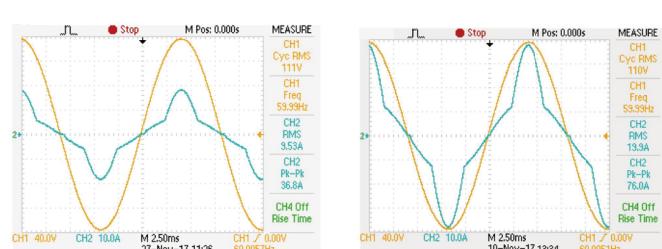
Inrush Current Test at Boot

AC RECTIFIED LOAD SIMULATION MEET THE IEC62040-3 AND IEC61683 TEST SPECIFICATIONS

AEL-5000 Series AC & DC electronic load AC rectified load mode is fully compliance with the IEC test specification requirements for the UPS, IEC 62040-3 UPS Efficiency Measurement Non-Linear and IEC 61683 Resistive Plus Non-Linear, respectively, AEL-5000 Series AC rectifier load mode uses CC + CR load mode and maintain current THD at 80 %, to simulate the actual PV Inverter connected to the electronic device.



The Actual V / A waveform

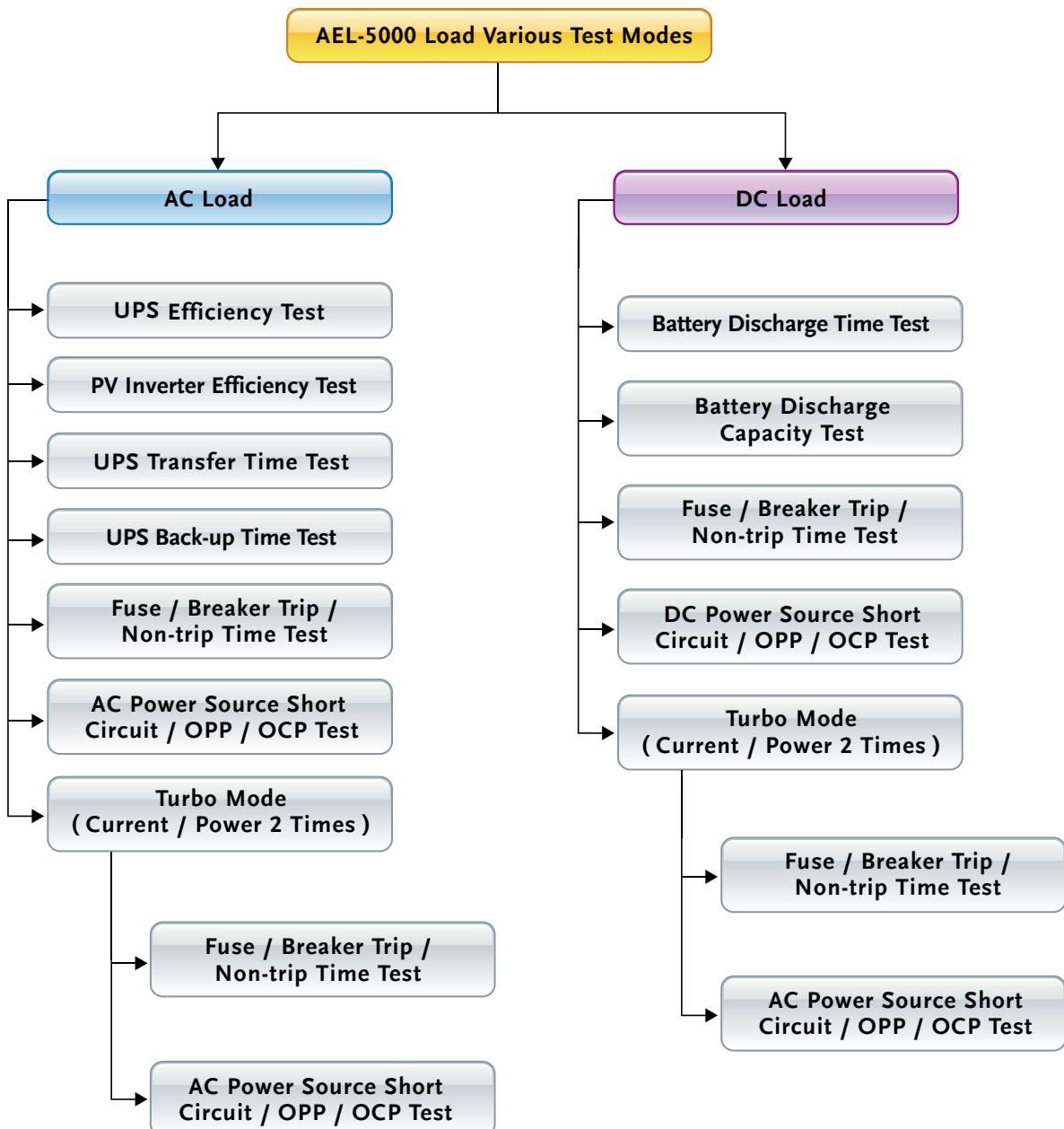


110 V, 5 A + 22 ohm Test Waveform 110 V, 10 A + 11 ohm Test Waveform
PV Inverter Test Non-Linear CC + Resistive Mode (CC+CR)

AC & DC Electronic Load

AEL-5000 LOAD VARIOUS TEST MODES

The AEL-5000 Series AC & DC electronic load features built-in test modes for a variety of products. Including AC Load of UPS, Inverter, Fuse/Breaker, AC Power Source and DC Load of Battery, Fuse/Breaker, DC Power Source etc..as shown below.



AC & DC Electronic Load

CURRENT PROTECTION COMPONENT TEST

Current protection component includes Fuse, Circuit breakers and a new PTC Resettable fuse etc., its function is when the circuit current exceeds the design of the rated value, that is, if the load exceeds the design of the current capacity, the circuit will be disconnected, in order to avoid overheating, even fire. Fuse is a one-time use of the protection components, Breaker and PTC can be reused.

The current protection components of the protection current value and the protection reaction time has usually a product of the relationship that is, the greater the current through the current protection component, the shorter the reaction time to protect the circuit. This is similar to energy protection components.

Due to this feature, the AEL-5000 Series AC & DC electronic load, in particular for the verification of current protection components, has developed a Fuse Test function to test and verify such protection element with an electronic load of rated current and power. When Turbo mode is set to ON, the test current can be up to double the maximum current within 1 second of test period. Take AEL-5004-350-37.5 as an example, the maximum test current can be doubled to 75 A. That is, when the Turbo mode of the AEL-5000 Series is ON, the test current value can reach to 2 units AEL-5000 Series (normal mode) within 1



Fuse



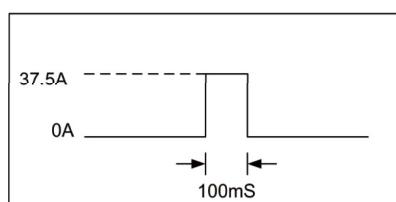
Breaker



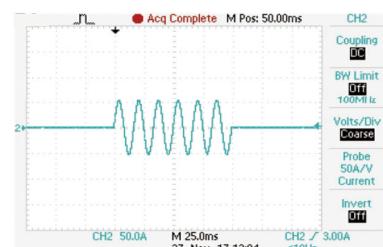
PTC



Turbo OFF, Short 100 ms 37.5 A
Test Result Screen



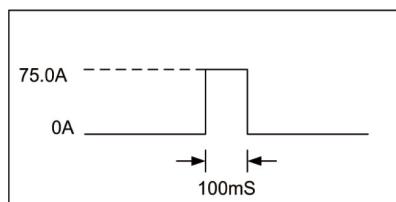
Turbo OFF, Short 100 ms 37.5 A Setting



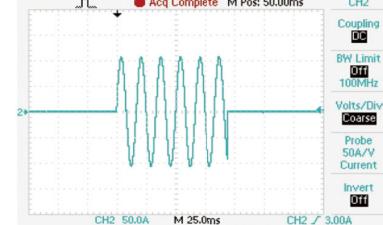
Turbo OFF, Short 100 ms 37.5 A
The Actual Test Waveform



Turbo ON, Short 100 ms 75.0 A
Test Result Screen



Turbo ON, Short 100 ms 75.0 A Setting

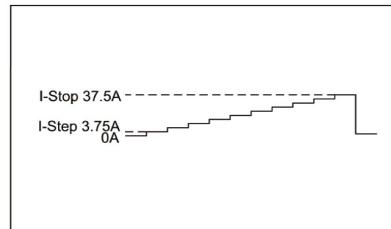


Turbo ON, Short 100 ms 75.0 A
The Actual Test Waveform

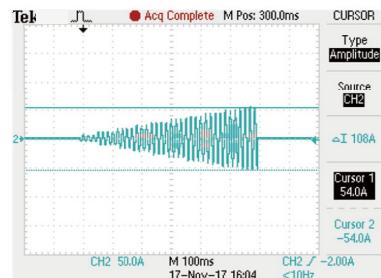
AC & DC Electronic Load



Turbo OFF, OCP Istep 3.75 A Istop 37.5A
Test Result Screen



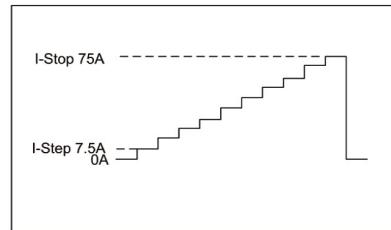
Turbo OFF, OCP Istep 3.75 A Istop 37.5 A
Setting



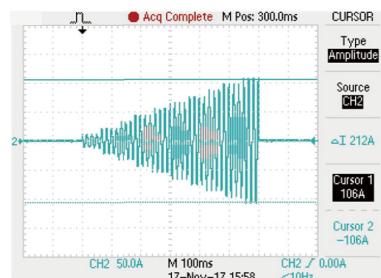
Turbo OFF, OCP Istep 3.75 A Istop 37.5 A
The Actual Test Waveform



Turbo ON, OCP Istep 7.5 A Istop 75 A
Test Result Screen



Turbo ON, OCP Istep 7.5 A Istop 75.0 A
Setting



Turbo ON, OCP Istep 7.5 A Istop 75.0 A
The Actual Test Waveform

Basically, Fuse test has Trip (Blown) and Non-Trip (no Blown) 2 types.

Fuse Test setting parameters include test current (Istart), test time (Time), test REPEAT Time etc..

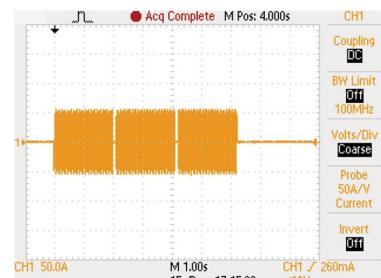
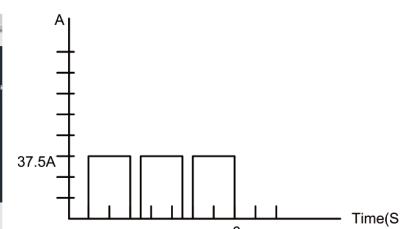
In the Trip fuse test, it is used to test when there is too large abnormal current the Fuse or Breaker must be able to provide the protection of the circuit break, that means current protection components need the fuse action, therefore the test current needs to be larger than the fuse current rating.

When the AEL-5000 Series AC & DC electronic load detects a voltage lower than 1.0 V, the LCD displays the number of Repeat Cycle and Current Protection Fusing Time XXXX.X sec.

In the Non-Trip (no Blown) test, the current protection component is required to achieve non-blow action, so the test current needs to be lower than the fuse current rating that is used to verify the fuse must not blow during normal current range. When the AEL-5000 Series AC & DC electronic load is not blown after the test time (Pulse Time) and the repeated Repeat number, the LCD displays the information of the Repeat number.



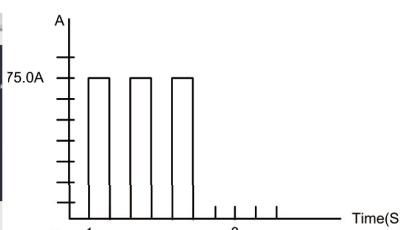
Turbo : OFF, Fuse Mode
Test Result Screen



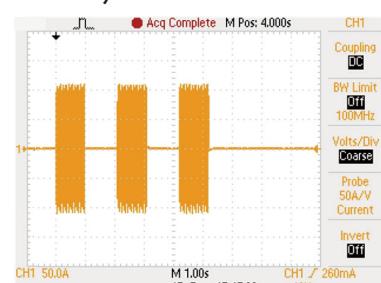
Turbo : OFF, Fuse ON, CC Pulse 37.5 A, 2 s,
Test 3 Cycles the Actual Test Waveform



Turbo ON, Fuse Mode
Test Result Screen



Setting : Turbo : ON, Fuse ON
CC Pulse 75.0 A, 1 s, Test 3 Cycles

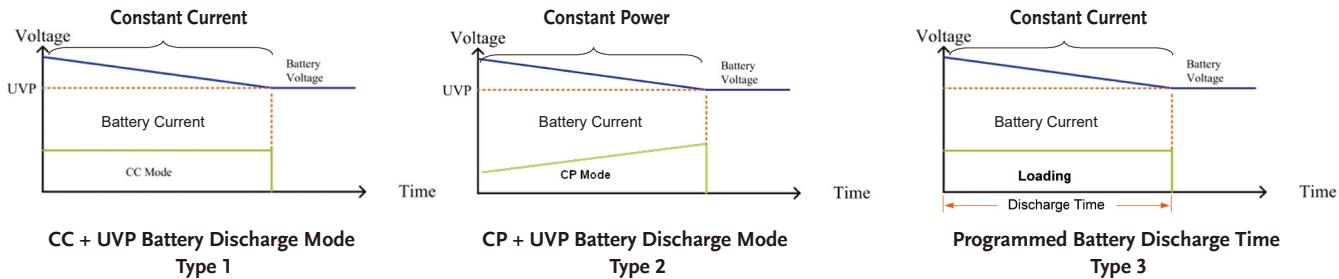


Turbo : ON, Fuse ON, CC Pulse 75 A, 1 s,
Test 3 Cycles the Actual Test Waveform

AC & DC Electronic Load

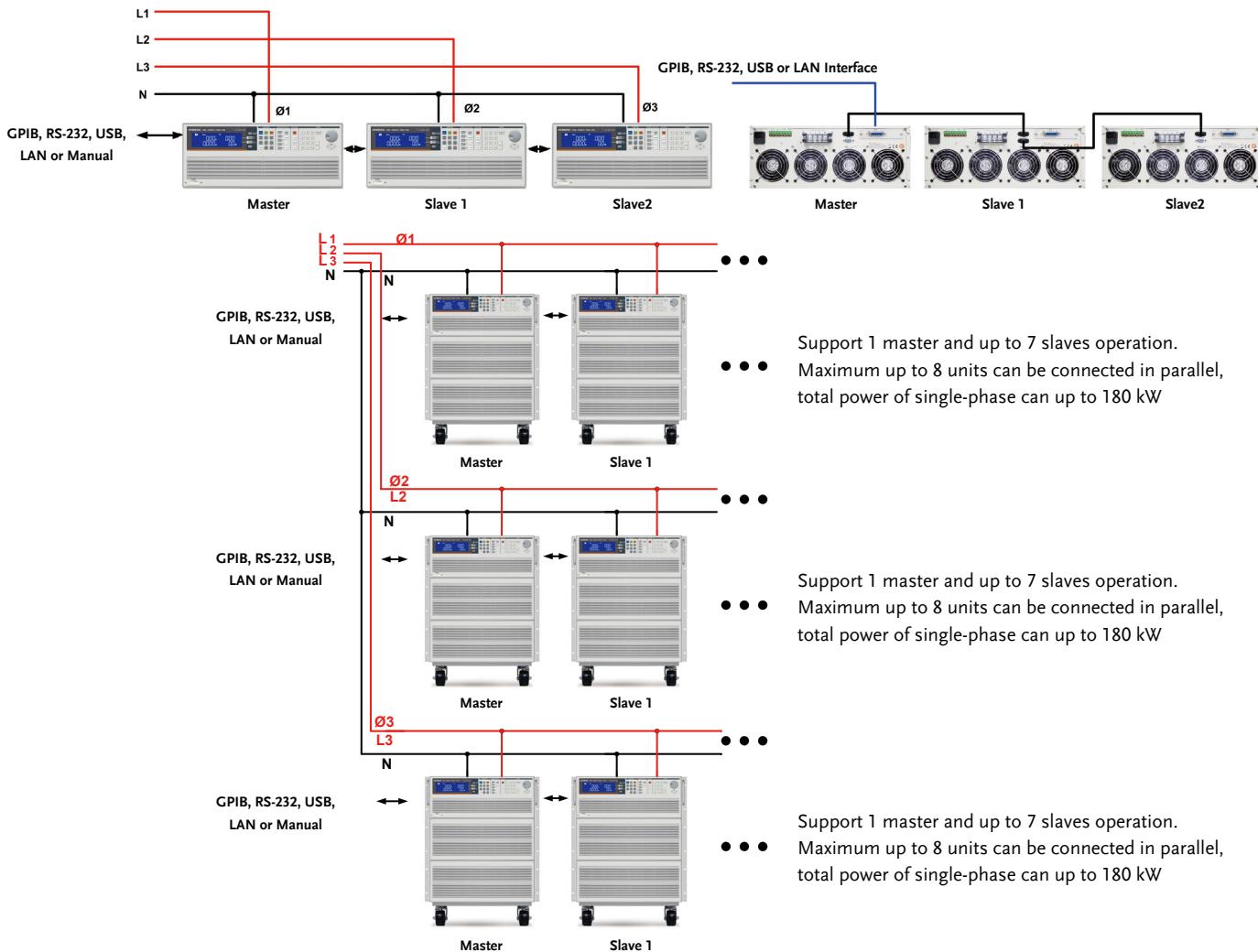
BATTERY TEST FUNCTION

AEL-5000 Series AC & DC electronic load has built-in new TYPE1 to TYPE3 battery discharge test, you can select the desired battery test mode, the test results can be directly displayed on the LCD display for battery AH capacity, the voltage value after discharge and the cumulative discharge time.



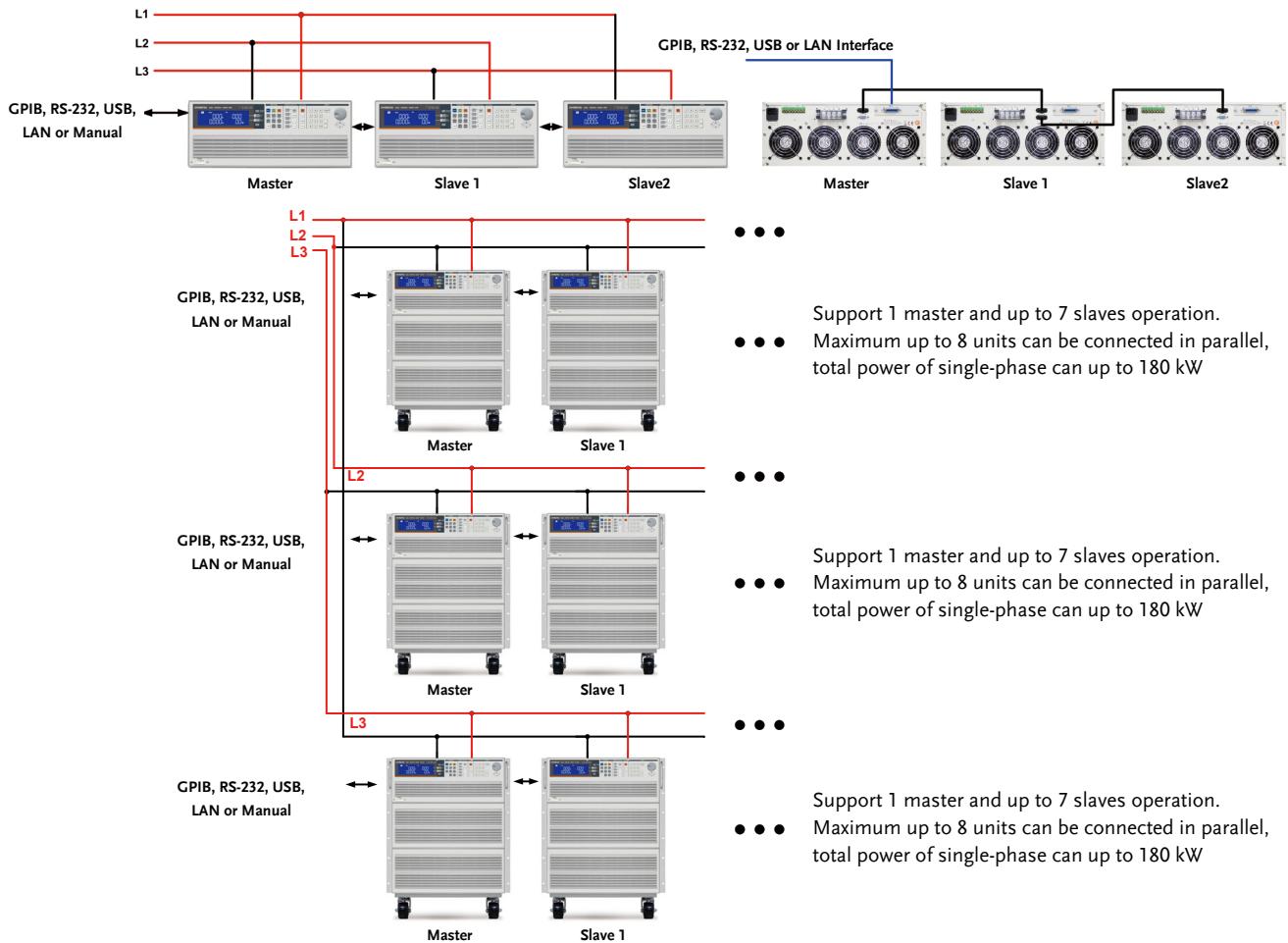
PARALLEL AND THREE-PHASE CONTROL

The AEL-5000 Series AC & DC load provides multiple units in parallel, three-phase applications that allows users to test applications with greater power or three-phase AC power, this is more flexibility to use the AEL-5000 Series AC & DC Electronic Load for control. In parallel / three-phase operation, the user operates the unit as the operation of a single machine, as long as the Master can be operated, Slave1 and Slave2 will automatically sink the load and measurement. Parallel and three-phase connection as shown below.

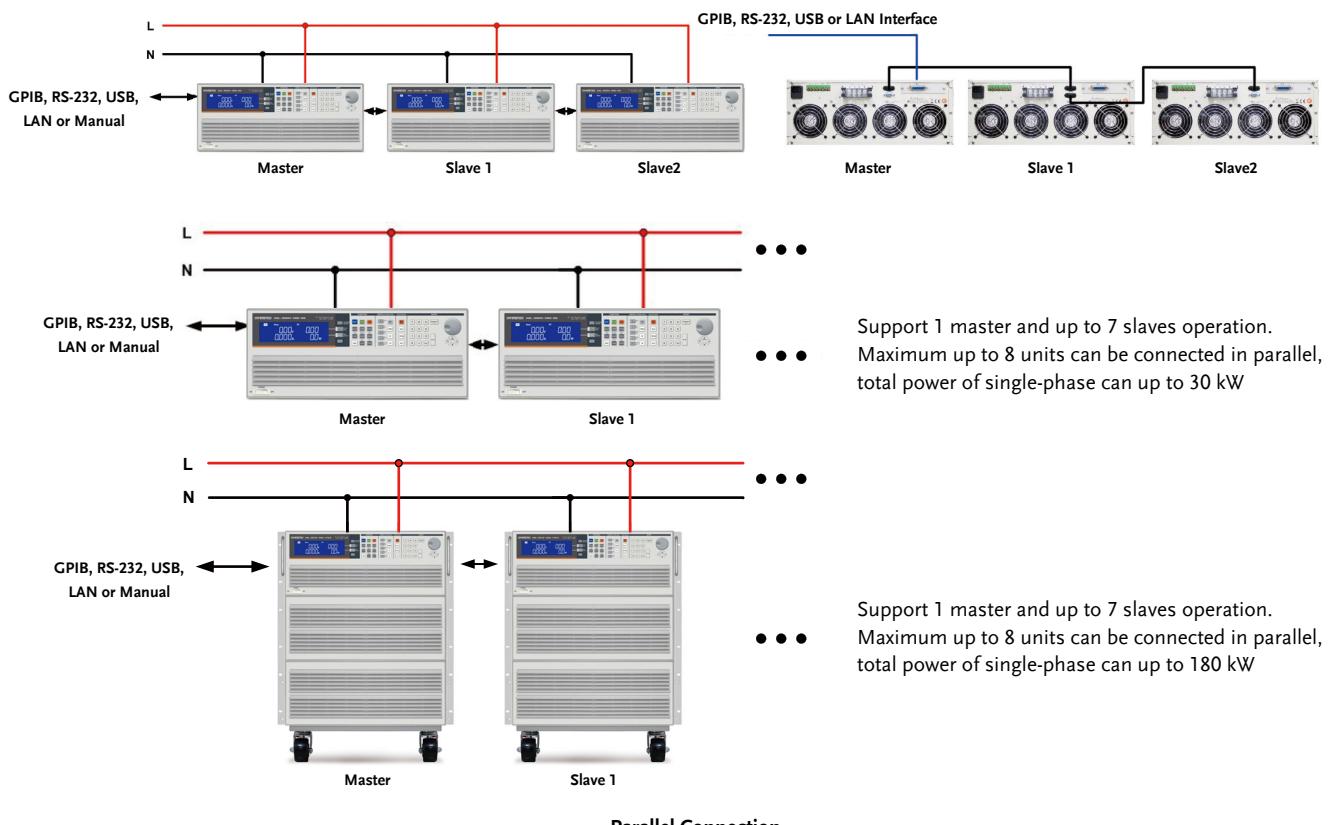


Maximum Power of Single-phase Can up to 180 kW, 3-phase Total Power up to 540 kW 3-phase \triangle or Y Connection

AC & DC Electronic Load



Maximum power of single-phase can up to 180 kW, 3-phase total power up to 540 kW 3-phase Δ or Y Connection parallel connection



Parallel Connection

AC & DC Electronic Load

PANEL INSTRUCTIONS



1	LCD Multi-function display Four meters can display the voltage value at the same time the Voltage(Vrms, Vpeak, Vmax., Vmin.) ~ Current (Irms, Ipeak, Imax., Imin.) ~ Watt, Voltampere(VA) ~ Frequency ~ Crest Factor ~ Power Factor ~ Total Harmonic Distortion of Voltag(VTHD) ~ Voltage Harmonic(VH) ~ Total Harmonic Distortion of Current(ITHD) ~ Current Harmonic(IH)	3 Operate function keys Mode ~ Preset ON / OFF ~ Load ON / OFF ~ Sense ON / OFF ~ Level A / B ~ Config ~ Limit ~ Recall ~ Store ~ SEQ ~ Local ~ System operate function keys
	2 Meter switch button V / A / W keys can set the display Rms / Peak / Max / Min, Meter key can select PF / CF / FREQ ~ switchable display WATT / VA / VAR keys ~ THD key choose to display THD	4 Waveform library keys Can be quickly set CF $\sqrt{2}$ / 2 / 2.5 / 3 / 3.5 , +/- PF 0.6 / 0.7 / 0.8 / 0.9 / 1.0 , FREQ Auto / 50 Hz / 60 Hz / 400 Hz
5		5 Test function keys Can select Short / OPP / OCP / Non-L / NL-CR / Fuse / Batt (Battery Discharge) / Trans (UPS transfer time) test functions
		6 Numeric keypad
7		7 Knob setting
		8 Switch
9		9 Cursor and button setting



10	AC power input connector	13	Master-slave control connector Master : Connect the top or bottom to the next unit Slave : The top connects to the previous unit and the bottom connects to the next unit
11	Vmonitor ~ Imonitor ~ Analog input ~ SYNC input Input terminal		
12	Vload, Vsense Input terminal	14	Communication interface (GPIB ~ RS-232 ~ USB ~ LAN)

AC & DC Electronic Load

SPECIFICATIONS												
	AEL-5002-350-18.75	AEL-5003-350-28	AEL-5004-350-37.5	AEL-5002-425-18.75	AEL-5003-425-28	AEL-5004-425-3 7.5						
Power (W)	1875 W	2800 W	3750 W	1875 W	2800 W	3750 W						
Current (Ampere)	18.75 Arms/56.25 Apeak	28 Arms / 84 Apeak	37.5 Arms / 112.5 Apeak	18.75 Arms/ 56.25 Apeak	28 Arms/ 84 Apeak	37.5 Arms / 112.5 Apeak						
Voltage (Volt)	50 Vrms to 350 Vrms / 500 Vdc			50 Vrms to 425 Vrms / 600 Vdc								
FREQUENCY Range	DC,40 Hz to 440 Hz(CC,CP Mode), DC to 440 Hz(LIN,CR,CV Mode)			DC,40 Hz to 440 Hz(CC,CP Mode), DC to 440 Hz(LIN,CR,CV Mode)								
PROTECTIONS												
Over Power Protection	1968.75 Wrms or Programmable	2940 Wrms or Programmable	3937.5 Wrms or Programmable	1968.75 Wrms or Programmable	2940 Wrms or Programmable	3937.5 Wrms or Programmable						
Over Current Protection	19.687 Arms or Programmable	29.40 Arms or Programmable	39.375 Arms or Programmable	19.687 Arms or Programmable	29.40 Arms or Programmable	39.375 Arms or Programmable						
Over Voltage Protection	367.5 Vrms / 525 Vdc			446.25 Vrms/630 Vdc								
Over Temp. Protection	Yes			Yes								
OPERATION MODE												
Constant Current Mode for Sine-Wave												
Range	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A						
Resolution	0.3125 mA / 16 bits	0.5 mA / 16 bits	0.625 mA / 16 bits	0.3125 mA / 16 bits	0.5 mA / 16 bits	0.625 mA / 16 bits						
Accuracy	±(0.1 % of setting + 0.2 % of range) @ 50/60 Hz, ±0.5 % of (setting + range) @ DC and 400 Hz			±(0.1 % of setting + 0.2 % of range) @ 50/60 Hz, ±0.5 % of (setting + range) @ DC and 400 Hz								
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave												
Range	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A						
Resolution	0.3125 mA/ 16 bits	0.5 mA / 16 bits	0.625 mA / 16 bits	0.3125 mA / 16 bits	0.5 mA / 16 bits	0.625 mA / 16 bits						
Accuracy	±(0.1 % of setting + 0.2 % of range) @ 50/60 Hz, ±0.5 % of (setting + range) @ DC and 400 Hz			±(0.1 % of setting + 0.2 % of range) @ 50/60 Hz, ±0.5 % of (setting + range) @ DC and 400 Hz								
Constant Resistance Mode												
Range	3.2 ohm to 64 kohm	2.0 ohm to 40 kohm	1.6 ohm to 32 kohm	3.2 ohm to 64 kohm	2.0 ohm to 40 kohm	1.6 ohm to 32 kohm						
Resolution *1	0.0052083 mS / 16 bits	0.0083333 mS / 16 bits	0.010416 mS / 16 bits	0.0052083 mS / 16 bits	0.0083333 mS / 16 bits	0.010416 mS / 16 bits						
Accuracy	±0.2 % of (setting+ range) @ 50/60 Hz, ±(0.5 % of setting + 2 % of range) @ DC and 400 Hz			±0.2 % of (setting+ range) @ 50/60 Hz, ±(0.5 % of setting + 2 % of range) @ DC and 400 Hz								
Constant Voltage Mode												
Range	50 Vrms to 350 Vrms / 500 Vdc			50 Vrms to 425 Vrms / 600 Vdc								
Resolution	0.01 V			0.1 V								
Accuracy	±(0.1 % of setting + 0.1 % of range)			±(0.1 % of setting + 0.1 % of range)								
Constant Power Mode												
Range	1875 W	2800 W	3750 W	1875 W	2800 W	3750 W						
Resolution	0.1 W	0.1 W	0.1 W	0.1 W	0.1 W	0.1 W						
Accuracy ^{*4}	±0.5 % of (setting+ range) @ 50/60 Hz, ±2 % of (setting+ range)			±0.5 % of (setting+ range) @ 50/60 Hz, ±2 % of (setting+ range)								
CREST FACTOR (CC & CP MODE ONLY)												
Range	√2 to 5			√2 to 5								
Resolution	0.1			0.1								
Accuracy	(0.5 % / Irms) + 1 % FS			(0.5 % / Irms) + 1 % FS								
POWER FACTOR (CC&CP MODE ONLY)												
Range	0 to 1 Lag or Lead			0 to 1 Lag or Lead								
Resolution	0.01			0.01								
Accuracy	1 % FS			1 % FS								
TEST MODE												
UPS Efficient Measurement	Non-Linear Mode			Non-Linear Mode								
Operating Frequency	Auto, 40 Hz to 440 Hz			Auto, 40 Hz to 440 Hz								
Current Range	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A						
PF Range	0 to 1			0 to 1								
Measuring Efficiency for PV Systems, Power Conditioners for THD 80 %	Resistive + Non-Linear Mode			Resistive + Non-Linear Mode								
Operating Frequency	Auto, 40 Hz to 440 Hz			Auto, 40 Hz to 440 Hz								
Current Range	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A						
Resistive Range	3.2 ohm to 64 kohm	2.0 ohm to 40 kohm	1.6 ohm to 32 kohm	3.2 ohm to 64 kohm	2.0 ohm to 40 kohm	1.6 ohm to 32 kohm						
UPS Back-Up Function (CC,LIN,CR,CP)												
UVP (VTH)	0 V to 500 V			0 V to 600 V								
UPS Back-Up Time	1 Sec to 99999 Sec (>27 H)			1 Sec to 99999 Sec (>27 H)								
Battery Discharge Function (CC,LIN,CR,CP)												
UVP (VTH)	50 Vrms to 350 Vrms / 500 Vdc			50 V rms to 425 Vrms / 600 Vdc								
Battery Discharge Time	1 Sec to 99999 Sec (>27 H)			1 Sec to 99999 Sec (>27 H)								
UPS Transfer Time												
Current Range	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A						
UVP (VTH)	2.5 V			2.5 V								
Time Range	0.15 mS to 999.99 mS			0.15 mS to 999.99 mS								
Fuse Test Mode												
Max. Current	Turbo OFF (CC1 to 3)	18.75 Arms	28.0 Arms	37.5 Arms	18.75 Arms	28.0 Arms						
	Turbo ON (CC3)	0.1 Sec to 333.33 Sec			0.1 Sec to 333.33 Sec							
	Turbo OFF (CC1 to 2)	37.5 Arms (x2) *3	56.0 Arms (x2) *3	75.0 Arms (x2) *3	37.5 Arms (x2) *3	56.0 Arms (x2) *3						
Trip & Non-Trip Time	Turbo OFF (Time1 to 3)	0.01 Sec to 0.50 Sec			0.01 Sec to 0.50 Sec							
	Turbo ON (Time1 to 2)	0.01 Sec to 600.00 Sec			0.01 Sec to 600.00 Sec							
	Turbo ON (Time3)	0.1 Sec to 999.9 Sec			0.1 Sec to 999.9 Sec							
OFF Time												
Meas. Accuracy	±0.003 Sec			±0.003 Sec								
Repeat Cycle	0 to 99999			0 to 99999								
Short/OPP/OCP Test Function												
ShortTime	Turbo OFF	0.1 Sec to 10 Sec or Cont.			0.1 Sec to 10 Sec or Cont.							
	Turbo ON	0.1 Sec to 1 Sec			0.1 Sec to 1 Sec							
OPP/OCP Step Time	Turbo OFF	100 ms			100 ms							
	Turbo ON	100 ms, up to 10 Steps			100 ms, up to 10 Steps							
OCP Istop	Turbo OFF	18.75 Arms	28.0 Arms	37.5 Arms	18.75 Arms	28.0 Arms	37.5 Arms					
	Turbo ON	37.5 Arms	56.0 Arms	75.0 Arms	37.5 Arms	56.0 Arms	75.0 Arms					
OPP Pstop	Turbo OFF	1875 W	2800 W	3750 W	1875 W	2800 W	3750 W					
	Turbo ON	3750 W	5600 W	7500 W	3750 W	5600 W	7500 W					

AC & DC Electronic Load

SPECIFICATIONS

	AEL-5002-350-18.75	AEL-5003-350-28	AEL-5004-350-37.5	AEL-5002-425-18.75	AEL-5003-425-28	AEL-5004-425-3 7.5
Programmable Inrush Current Simulation: Istart- Istop/ Tsep						
Istart, Inrush Start Current	0 A to 37.5 A	0 A to 56 A	0 A to 75 A	0 A to 37.5 A	0 A to 56 A	0 A to 75 A
Inrush Step Time		0.1 ms to 100 ms			0.1 ms to 100 ms	
Istop, Inrush Stop Current	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A
Programmable Surge current simulation: S1/T1 - S2/T2 - S3/T3						
S1 and S2 Current	0 A to 37.5 A	0 A to 56 A	0 A to 75 A	0 A to 37.5 A	0 A to 56 A	0 A to 75 A
T1 and T2 Time		0.01 Sec to 0.5 Sec			0.01 Sec to 0.5 Sec	
S3 Current	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A	0 A to 18.75 A	0 A to 28 A	0 A to 37.5 A
T3 Time		0.01 Sec to 9.99 Sec or Cont.			0.01 Sec to 9.99 Sec or Cont.	
MEASUREMENTS						
VOLTAGE READBACK V METER						
Range	500 V				600 V	
Resolution	0.01 V				0.01 V	
Accuracy	±0.05 % of (reading + range)				±0.05 % of (reading + range)	
Parameter	Vrms,V Max/Min,± Vpk				Vrms,V Max/Min,± Vpk	
CURRENT READBACK A METER						
Range	9.375 Arms/18.75 Arms	14 Arms/28 Arms	18.75 Arms/37.5 Arms	9.375 Arms/ 18.75 Arms	14 Arms/28 Arms	18.75 Arms/37.5 Arms
Resolution	0.2 mA/0.4 mA	0.3 mA/0.6 mA	0.4 mA/0.8 mA	0.2 mA/0.4 mA	0.3 mA/0.6 mA	0.4 mA/0.8 mA
Accuracy	±0.05 % of (reading + range) @ 50/60 Hz				±0.05 % of (reading + range) @ 50/60 Hz	
Parameter	Irms, I Max/Min, ± Ipk				Irms, I Max/Min, ± Ipk	
WATT READBACK W METER						
Range	1875 W	2800 W	3750 W	1875 W	2800 W	3750 W
Resolution	0.03125 W	0.05 W	0.0625 W	0.03125 W	0.05 W	0.0625 W
Accuracy *4	±0.5 % of (reading+ range) @ 50/60 Hz, ±2 % of (reading+ range)				±5 % of (reading+ range) @ 50/60 Hz, ±2 % of (reading+ range)	
VA METER	VrmsxArms Correspond To Vrms and Arms			VrmsxArms Correspond To Vrms and Arms		
POWER FACTOR METER						
Range	± 0.000 to 1.000				± 0.000 to 1.000	
Accuracy	±(0.002±(0.001/PF) x F)				±(0.002±(0.001/PF) x F)	
Frequency METER (Hz)	DC,40 Hz to 440 Hz			DC,40 Hz to 440 Hz		
Range						
Accuracy	0.1 %				0.1 %	
Other Parameter METER	VA, VAR, CF_I, Ipeak, Imax, Imin Vmax, Vmin, IHD, VHD, ITHD, VTHD					
OTHERS						
Startup Loading	Yes, Power on loading during Inverter / UPS startup			Yes, Power on loading during Inverter/ UPS start up		
Load ON / OFF Angle	0 to 359 degree can be programmed for the angle of load ON and load OFF loading			0 to 359 degree can be programmed for the angle of load ON and load OFF loading		
Half Cycle and SCR/TRIAC Loading	Positive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed			Positive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed		
Master/Slave (3 Phase or Parallel Application)	Yes, 1 master and upto 7 slave units			Yes, 1 master and upto 7 slave units		
External Programming Input (Option)	FS /10 Vdc, Resolution 0.1 V			FS / 10 Vdc, Resolution 0.1 V		
External SYNC Input	TTL			TTL		
Vmonitor (Isolated)	±500 V / ± 10V			±600 V / ± 10 V		
Imonitor (Isolated)	±56.25 Apk / ±10 Vpk	±84 Apk / ±10 Vpk	±112.5 Apk / ±10 Vpk	±56.25 Apk / ±10 Vpk	±84 Apk / ±10 Vpk	±112.5 Apk / ±10 Vpk
Interface (Option)	GPIB, RS-232, LAN, USB			GPIB, RS-232, LAN, USB		
MAX. Power Consumption	150 VA			150 VA		
Operation Temperature *2	0 °C to 40 °C			0 °C to 40 °C		
Current of Input Impedance (mA) @ 50/60 Hz, @ 400 Hz	~V x 0.3, ~V x 2.2	~V x 0.45, ~V x 3.3	~V x 0.6, ~V x 4.4	~V x 0.3, ~V x 2.2	~V x 0.45, ~V x 3.3	~V x 0.6, ~V x 4.4
Dimension (H x W x D)	177 mm x 440 mm x 558 mm			177 mm x 440 mm x 558 mm		
Weight	21.5 kg	27.5 kg	33.5 kg	21.5 kg	27.5 kg	33.5 kg

*1 ms (millisiemens) is the unit of conductance(G), one siemens equal to 1/Ω

*2 Operating temperature range is 0 °C to 40 °C, all specification apply for 25 °C±5 °C, Except as noted

*3 Turbo mode for up to 2X Current rating & Power rating support Fuse, Short/OCP/OPP test function

*4 The specification apply for current less than 20 Arms

* All specifications apply for 50/60 Hz.

* All specifications subject to change

Input AC Power : 100 Vac to 230 Vac ± 10 %, 50/60 Hz

Cooling : Advanced Fan Cooled

AC & DC Electronic Load

SPECIFICATIONS												
	AEL-5006-350-56	AEL-5008-350-75	AEL-5012-350-112.5	AEL-5015-350-112.5	AEL-5019-350-112.5	AEL-5023-350-112.5						
Power (W)	5600 W	7500 W	11250 W	15000 W	18750 W	22500 W						
Current (Ampere)	56 Arms/ 168 Apeak	75 Arms / 225 Apeak	112.5 Arms/ 337.5 Apeak	112.5 Arms/ 337.5 Apeak	112.5 Arms/ 337.5 Apeak	112.5 Arms/ 337.5 Apeak						
Voltage (Volt)	50 Vrms to 350 Vrms / 500 Vdc											
FREQUENCY Range	DC, 40 Hz to 440 Hz(CC,CP Mode), DC to 440 Hz(LIN,CR,CV Mode)											
PROTECTIONS												
Over Power Protection	5880 Wrms or Programmable	7875 Wrms or Programmable	11812.5 Wrms or Programmable	15750 Wrms or Programmable	19687.5 Wrms or Programmable	23625 Wrms or Programmable						
Over Current Protection	58.8 Arms, or Programmable	78.75 Arms, or Programmable	118.125 Arms or Programmable									
Over Voltage Protection	367.5 Vrms/525 Vdc											
Over Temp. Protection	Yes											
OPERATION MODE												
Constant Current Mode for Sine-Wave												
Range	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A						
Resolution	1 mA / 16 bits	1.25 mA / 16 bits	1.875 mA / 16 bits									
Accuracy	±(0.1 % of setting + 0.2 % of range) @ 50/60 Hz, ±0.5 % of (setting + range) @ DC and 400 Hz											
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave												
Range	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A						
Resolution	1 mA / 16 bits	1.25 mA / 16 bits	1.875 mA / 16 bits									
Accuracy	±(0.1 % of setting + 0.2 % of range) @ 50/60 Hz ±0.5 % of (setting + range) @ DC and 400 Hz											
Constant Resistance Mode												
Range	1 ohm to 20 kohm	0.8 ohm to 16 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm						
Resolution ^{≈1}	0.016666 mS / 16 bits	0.020832 mS / 16 bits	0.031248 mS / 16 bits	0.031248 mS / 16 bits	0.031248 mS / 16 bits	0.031248 mS / 16 bits						
Accuracy	±0.2 % of (setting+ range) @ 50/60 Hz, ±(0.5 % of setting + 2 % of range) @ DC and 400 Hz											
Constant Voltage Mode												
Range	50 Vrms to 350 Vrms / 500 Vdc											
Resolution	0.1 V											
Accuracy	±0.2 % of (setting + range) @ 50/60 Hz											
Constant Power Mode												
Range	5600 W	7500 W	11250 W	15000 W	18750 W	22500 W						
Resolution	0.1 W	0.1 W	1 W	1 W	1 W	1 W						
Accuracy ^{≈4}	±0.5 % of (setting+ range) @ 50/60 Hz, ±2 % of (setting+ range)											
CREST FACTOR (CC & CP MODE ONLY)												
Range	$\sqrt{2}$ to 5											
Resolution	0.1											
Accuracy	(0.5 % / Irms)+ 1 % FS											
POWER FACTOR (CC&CP MODE ONLY)												
Range	0 to 1 Lag or Lead											
Resolution	0.01											
Accuracy	1 % FS											
TEST MODE												
UPS Efficient Measurement	Non-Linear Mode											
Operating Frequency	Auto, 40 Hz to 440 Hz											
Current Range	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A						
PF Range	0 to 1											
Measuring Efficiency for PV Systems, Power Conditioners for THD 80 %	Resistive + Non-Linear Mode											
Operating Frequency	Auto, 40 Hz to 440 Hz											
Current Range	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A						
Resistive Range	1 ohm to 20 kohm	0.8 ohm to 16 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm						
UPS Back-Up Function (CC,LIN,CR,CP)												
UVP (VTH)	50 Vrms to 350 Vrms / 500 Vdc											
UPS Back-Up Time	1 Sec to 99999 Sec (>27 H)											
Battery Discharge Function (CC,LIN,CR,CP)												
UVP (VTH)	50 Vrms to 350 Vrms / 500 Vdc											
Battery Discharge Time	1 Sec to 99999 Sec (>27 H)											
UPS Transfer Time												
Current Range	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A						
UVP (VTH)	2.5 V											
Time Range	0.15 ms to 999.9 ms											
Fuse Test Mode												
Max. Current	Turbo OFF (CC1 to 3)	56 Arms	75 Arms	112.5 Arms	112.5 Arms	112.5 Arms						
	Turbo ON (CC3)											
	Turbo ON (CC1 to 2)	112 Arms (x2) ^{≈3}	150 Arms (x2) ^{≈3}	225 Arms (x2) ^{≈3}	225 Arms (x2) ^{≈3}	225 Arms (x2) ^{≈3}						
Trip & Non-Trip Time	Turbo OFF (Time1 to 3)	0.01 Sec to 333.33 Sec										
	Turbo ON (Time1 to 2)	0.01 Sec to 0.50 Sec										
	Turbo ON (Time3)	0.01 Sec to 600.00 Sec										
OFF Time												
Meas. Accuracy	±0.003 Sec											
RepeatCycle	0 to 99999											
Short/OPP/OCP Test Function												
ShortTime	Turbo OFF	0.1 Sec to 10 Sec or Cont.										
	Turbo ON	0.1 Sec to 1 Sec										
OPP/OCP Step	Turbo OFF	100 ms										
	Turbo ON	100 ms, up to 10 Steps										
OCP Istop	Turbo OFF	56 Arms	75 Arms	112.5 Arms	112.5 Arms	112.5 Arms						
	Turbo ON	112 Arms	150 Arms	225 Arms	225 Arms	225 Arms						
OPP Pstop	Turbo OFF	5600 W	7500 W	11250 W	15000 W	18750 W						
	Turbo ON	11200 W	15000 W	22500 W	30000 W	37500 W						
						45000 W						

AC & DC Electronic Load

SPECIFICATIONS

	AEL-5006-350-56	AEL-5008-350-75	AEL-5012-350-112.5	AEL-5015-350-112.5	AEL-5019-350-112.5	AEL-5023-350-112.5
Programmable Inrush Current Simulation: Istart- Istop/ Tsep						
Istart,Inrush Start Current	0 A to 112 A	0 A to 150 A	0 A to 225 A	0 A to 225 A	0 A to 225 A	0 A to 225 A
Inrush Step Time			0.1 ms to 100 ms			
Istop,Inrush Stop Current	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A
Programmable Surge Current Simulation S1/T1 - S2/T2 - S3/T3						
S1 and S2 Current	0 A to 112 A	0 A to 150 A	0 A to 225 A	0 A to 225 A	0 A to 225 A	0 A to 225 A
T1 and T2 Time			0.01 Sec to 0.5 Sec			
S3 Current	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A
T3 Time			0.01 Sec to 9.99 Sec or Cont.			
MEASUREMENTS						
VOLTAGE READBACK V METER						
Range			500 V			
Resolution			0.01 V			
Accuracy			±0.05 % of (reading + range)			
Parameter			Vrms,V Max/Min, ±Vpk			
CURRENT READBACK A METER						
Range	28 Arms/56 Arms	37.5 Arms/75 Arms	56.25 Arms/112.5 Arms	56.25 Arms/112.5 Arms	56.25 Arms/112.5 Arms	56.25 Arms/112.5 Arms
Resolution	0.6 mA/1.2 mA	0.8 mA/1.6 mA	1.2 mA/2.4 mA	1.2 mA/2.4 mA	1.2 mA/2.4 mA	1.2 mA/2.4 mA
Accuracy			±0.1 % of (reading + range) @ 50/60 Hz			
Parameter			Irms,I Max/Min, ±Ipk			
WATT READBACK W METER						
Range	5600 W	7500 W	11250 W	15000 W	18750 W	22500 W
Resolution	0.1 W	0.125 W	0.1875 W	0.25 W	0.3125 W	0.375 W
Accuracy *4			± 0.5 % of (reading+ range) @ 50/60 Hz ± 2 % of (reading+ range)			
VA METER			VrmsxArms Correspond To Vrms and Arms			
POWER FACTOR METER						
Range			± 0.000 to 1.000			
Accuracy			±(0.002±(0.001/PF) x F)			
Frequency METER (Hz)						
Range			DC, 40 Hz to 440 Hz			
Accuracy			0.1 %			
Other Parameter METER						
VA, VAR, CF I, Ipeak, Imax, Imin Vmax, Vmin, IHD, VHD, ITHD, VTHD						
OTHERS						
Startup Loading			Yes, Power on loading during Inverter/ UPS startup			
Load ON / OFF Angle			0 to 359 degree can be programmed for the angle of load ON and load OFF loading			
Half Cycle and SCR/TRIAC Loading			Positive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed			
Master/Slave (3 Phase or Parallel)			Yes,1 master and upto 7 slave unit			
External Programming Input (Option)			FS / 10 Vdc, Resolution 0.1 V			
External SYNC Input			TTL			
Vmonitor (Isolated)			± 500 V /± 10 V			
Imonitor (Isolated)	± 168 Apk / ± 10 Vpk	± 225 Apk / ± 10 Vpk	± 337.5 Apk / ± 10 Vpk	± 337.5 Apk / ± 10 Vpk	± 337.5 Apk / ± 10 Vpk	± 337.5 Apk / ± 10 Vpk
Interface (Option)			GPIB, RS-232, LAN, USB			
MAX. Power Consumption	270 VA	270 VA	390 VA	510 VA	630 VA	750 VA
Operation Temperature *2			0 °C to 40 °C			
Current of Input Impedance (mA) @ 50/60 Hz, @ 400 Hz	~V x 0.9, ~V x 6.6	~V x 1.2, ~V x 8.8	~V x 1.8, ~V x 13.2	~V x 2.4, ~V x 17.6	~V x 3.0, ~V x 22	~V x 3.6, ~V x 26.4
Dimension (H x W x D)	458 mm x 480 mm x 590 mm	458 mm x 480 mm x 590 mm	636 mm x 480 mm x 590 mm	814 mm x 480 mm x 590 mm	1283 mm x 600 mm x 600 mm	1283 mm x 600 mm x 600 mm
Weight	58 kg	70 kg	105 kg	740 kg	260 kg	295 kg

*1 ms (millisiemens) is the unit of conductance(G), one siemens equal to 1/Ω

*2 Operating temperature range is 0 °C to 40 °C, all specification apply for 25 °C±5 °C, Except as noted

*3 Turbo mode for up to 2X Current rating & Power rating support Fuse, Short/OCP/OPP test function

*4 The specification apply for current less than 20 Arms

* All specifications apply for 50/60 Hz.

* All specifications subject to change

Input AC Power : 100 Vac to 230 Vac ± 10 %, 50/60 Hz

Cooling : Advanced Fan Cooled

AC & DC Electronic Load

SPECIFICATIONS											
	AEL-5006-425-56	AEL-5008-42.5-7.5	AEL-5012-425-112.5	AEL-5015-425-112.5	AEL-5019-425-112.5	AEL-5023-425-112.5					
Power (W)	5600 W	7500 W	11250 W	15000 W	18750 W	22500 W					
Current (Ampere)	56 Arms/ 168 Apeak	75 Arms / 225 Apeak	112.5 Arms/ 337.5 Apeak	112.5 Arms/ 337.5 Apeak	112.5 Arms/ 337.5 Apeak	112.5 Arms/ 337.5 Apeak					
Voltage (Volt)			50 Vrms to 425 Vrms / 600 Vdc								
FREQUENCY Range	DC,40 Hz to 440 Hz(CC,CP Mode), DC to 440 Hz(LIN,CR,CV Mode)										
PROTECTIONS											
Over Power Protection	5880 Wrms or Programmable	7875 Wrms or Programmable	11812.5 Wrms or Programmable	15750 Wrms or Programmable	19687.5 Wrms or Programmable	23625 Wrms or Programmable					
Over Current Protection	58.8 Arms, or Programmable	78.75 Arms, or Programmable	118.125 Arms or Programmable	118.125 Arms or Programmable	118.125 Arms or Programmable	118.125 Arms or Programmable					
Over Voltage Protection			446.25 Vrms/630 Vdc								
Over Temp. Protection			Yes								
OPERATION MODE											
Constant Current Mode for Sine-Wave											
Range	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A					
Resolution	1 mA/ 16 bits	1.25 mA/ 16 bits	1.875 mA / 16 bits	1.875 mA / 16 bits	1.875 mA / 16 bits	1.875 mA / 16 bits					
Accuracy	±(0.1 % of setting + 0.2 % of range) @ 50/60 Hz,±0.5 % of (setting + range) @ DC and 400 Hz										
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave											
Range	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A					
Resolution	1 mA/ 16 bits	1.25 mA/ 16 bits	1.875 mA / 16 bits	1.875 mA / 16 bits	1.875 mA / 16 bits	1.875 mA / 16 bits					
Accuracy	±(0.1 % of setting + 0.2 % of range) @ 50/60 Hz,±0.5 % of (setting + range) @ DC and 400 Hz										
Constant Resistance Mode											
Range	1 ohm to 20 kohm	0.8 ohm to 16 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm					
Resolution ^{±1}	0.016666 mS / 16 bits	0.020832 mS / 16 bits	0.031248 mS / 16 bits	0.031248 mS / 16 bits	0.031248 mS / 16 bits	0.031248 mS / 16 bits					
Accuracy	±0.2 % of (setting+ range) @ 50/60 Hz,±(0.5 % of setting + 2 % of range) @ DC and 400 Hz										
Constant Voltage Mode											
Range			50 Vrms to 425 Vrms / 600 Vdc								
Resolution			0.1 V								
Accuracy	±0.2 % of (setting + range) @ 50/60 Hz										
Constant Power Mode											
Range	5600 W	7500 W	11250 W	15000 W	18750 W	22500 W					
Resolution	0.1 W	0.1 W	1 W	1 W	1 W	1 W					
Accuracy ^{±4}	±0.5 % of (setting+ range) @ 50/60 Hz,±2 % of (setting+ range)										
CREST FACTOR (CC & CP MODE ONLY)											
Range			√2 to 5								
Resolution			0.1								
Accuracy	(0.5 % / Irms)+ 1 % FS										
POWER FACTOR (CC&CP MODE ONLY)											
Range			0 to 1 Lag or Lead								
Resolution			0.01								
Accuracy	1 % FS										
TEST MODE											
UPS Efficient Measurement	Non-Linear Mode										
Operating Frequency	Auto, 40 Hz to 440 Hz										
Current Range	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A					
PF Range	0 to 1										
Measuring Efficiency for PV Systems, Power Conditioners for THD 80 %											
Operating Frequency			Resistive+ Non-Linear Mode								
Auto, 40 Hz to 440 Hz											
Current Range	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A					
Resistive Range	1 ohm to 20 kohm	0.8 ohm to 16 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm	0.533 ohm to 10.666 kohm					
UPS Back-Up Function (CC,LIN,CR,CP)											
UVP (VTH)	50 Vrms to 425 Vrms / 600 Vdc										
UPS Back-Up Time	1 Sec to 99999 Sec (>27 H)										
Battery Discharge Function (CC,LIN,CR,CP)											
UVP (VTH)	50 Vrms to 425 Vrms / 600 Vdc										
Battery Discharge Time	1 Sec to 99999 Sec (>27 H)										
UPS Transfer Time											
Current Range	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A					
UVP (VTH)	2.5 V										
Time Range	0.15 ms to 999.9 ms										
Fuse Test Mode											
Max. Current	Turbo OFF (CC1 to 3)	56 Arms	75 Arms	112.5 Arms	112.5 Arms	112.5 Arms					
	Turbo ON (CC3)										
	Turbo ON (CC1 to 2)	112 Arms (x2) ^{±3}	150 Arms (x2) ^{±3}	225 Arms (x2) ^{±3}	225 Arms (x2) ^{±3}	225 Arms (x2) ^{±3}					
Trip & Non-Trip Time	Turbo OFF (Time1)	0.01 Sec to 333.33 Sec									
	Turbo ON (Time1 to 2)	0.01 Sec to 0.50 Sec									
	Turbo ON (Time3)	0.01 Sec to 600.00 Sec									
OFF Time	0.1 Sec to 999.9 Sec										
Meas. Accuracy	± 0.003 Sec										
RepeatCycle	0 to 99999										
Short/OPP/OCP Test Function											
ShortTime	Turbo OFF	0.1 Sec to 10 Sec or Cont.									
	Turbo ON	0.1 Sec to 1 Sec									
OPP/OCP Step Time	Turbo OFF	100 ms									
	Turbo ON	100 ms, up to 10 Steps									
OCP Istop	Turbo OFF	56 Arms	75 Arms	112.5 Arms	112.5 Arms	112.5 Arms					
	Turbo ON	112 Arms	150 Arms	225 Arms	225 Arms	225 Arms					
OPP Pstop	Turbo OFF	5600 W	7500 W	11250 W	15000 W	18750 W					
	Turbo ON	11200 W	15000 W	22500 W	30000 W	37500 W					
						45000 W					

AC & DC Electronic Load

SPECIFICATIONS

	AEL-5006-425-56	AEL-5008-42.5-7.5	AEL-5012-425-112.5	AEL-5015-425-112.5	AEL-5019-425-112.5	AEL-5023-425-112.5
Programmable Inrush Current Simulation: Istart- Istop/ Tsep						
Istart,Inrush	0 A to 112 A	0 A to 150 A	0 A to 225 A	0 A to 225 A	0 A to 225 A	0 A to 225 A
Inrush Step Time			0.1 ms to 100 ms			
Istop,Inrush Stop Current	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A
Programmable Surge Current Simulation S1/T1 - S2/T2 - S3/T3						
S1 and S2 Current	0 A to 112 A	0 A to 150 A	0 A to 225 A	0 A to 225 A	0 A to 225 A	0 A to 225 A
T1 and T2 Time			0.01 Sec to 0.5 Sec			
S3 Current	0 A to 56 A	0 A to 75 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A	0 A to 112.5 A
T3 Time			0.01 Sec to 9.99 Sec or Cont.			
MEASUREMENTS						
VOLTAGE READBACK V METER						
Range			600 V			
Resolution			0.01 V			
Accuracy			±0.05 % of (reading + range)			
Parameter			Vrms,V Max/Min, ±Vpk			
CURRENT READBACK A METER						
Range	28 Arms/56 Arms	37.5 Arms/75 Arms	56.25 Arms/112.5 Arms	56.25 Arms/112.5 Arms	56.25 Arms/112.5 Arms	56.25 Arms/112.5 Arms
Resolution	0.6 mA/1.2 mA	0.8 mA/1.6 mA	1.2 mA/2.4 mA	1.2 mA/2.4 mA	1.2 mA/2.4 mA	1.2 mA/2.4 mA
Accuracy			± 0.1 % of (reading + range) @ 50/60 Hz			
Parameter			Irms,I Max/Min, ±Ipk			
WATT READBACK W METER						
Range	5600 W	7500 W	11250 W	15000 W	18750 W	22500 W
Resolution	0.1 W	0.125 W	0.1875 W	0.25 W	0.3125 W	0.375 W
Accuracy *4			± 0.5 % of (reading+ range) @ 50/60 Hz ± 2 % of (reading+ range)			
VA METER						
POWER FACTOR METER						
Range			± 0.000 to 1.000			
Accuracy			±(0.002±(0.001/PF) x F)			
Frequency METER (Hz)						
Range			DC,40 Hz to 440 Hz			
Accuracy			0.1 %			
Other Parameter METER						
VA, VAR, CF_I, Ipeak, Imax, Imin, Vmax, Vmin, IHD, VHD, ITHD, VTHD						
OTHERS						
Startup Loading			Yes, Power on loading during Inverter / UPS startup			
Load ON / OFF Angle			0 to 359 degree can be programmed for the angle o load ON and load OFF loading			
Half Cycle and SCR/TRIAC Loading			Positive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed			
Master/Slave (3 Phase or Parallel)			Yes, 1 master and upto 7 slave unit			
External Programming Input (Option)			FS / 10 Vdc, Resolution 0.1 V			
External SYNC Input			TTL			
Vmonitor (Isolated)			±600 V ± 10 V			
Imonitor (Isolated)	± 168 Apk / ± 10 Vpk	± 225 Apk / ± 10 Vpk	± 337.5 Apk / ± 10 Vpk	± 337.5 Apk / ± 10 Vpk	± 337.5 Apk / ± 10 Vpk	± 337.5 Apk / ± 10 Vpk
Interface (Option)			GPIB, RS-232, LAN, USB			
MAX. Power Consumption	270 VA	270 VA	390 VA	510 VA	630 VA	750 VA
Operation Temperature *2			0 °C to 40 °C			
Current of Input Impedance (mA) @ 50/60 Hz, @ 400 Hz	~V x 0.9, ~V x 6.6	~V x 1.2, ~V x 8.8	~V x 1.8, ~V x 13.2	~V x 2.4, ~V x 17.6	~V x 3.0, ~V x 22	~V x 3.6, ~V x 26.4
Dimension (H x W x D)	458 mm x 480 mm x 590 mm	458 mm x 480 mm x 590 mm	636 mm x 480 mm x 590 mm	814 mm x 480 mm x 590 mm	1283 mm x 600 mm x 600 mm	1283 mm x 600 mm x 600 mm
Weight	58 kg	70 kg	105 kg	140 kg	260 kg	295 kg

*1 ms (millisiemens) is the unit of conductance(G), one siemens equal to $1/\Omega$

*2 Operating temperature range is 0 °C to 40 °C, all specification apply for 25 °C±5 °C, Except as noted

*3 Turbo mode for up to 2X Current rating & Power rating support Fuse, Short/OCP/OPP test function

*4 The specification apply for current less than 20 Arms

* All specifications apply for 50/60 Hz.

* All specifications subject to change

Input AC Power : 100 Vac to 230 Vac ± 10 %, 50/60 Hz

Cooling : Advanced Fan Cooled

AC & DC Electronic Load

SPECIFICATIONS

	AEL-5003-480-18.75	AEL-5004-480-28
Power (W)	2800 W	3750 W
Current (Ampere)	18.75 Arms / 56.25 Apeak	28 Arms / 84 Apeak
Voltage (Volt)	50 Vrms to 480 Vrms / 700 Vdc	
FREQUENCY Range	DC,40 Hz to 70 Hz(CC,CP Mode), DC to 70 Hz(LIN,CR,CV Mode)	
PROTECTIONS		
Over Power Protection	2940 Wrms or Programmable	3937.5 Wrms or Programmable
Over Current Protection	19.687 Arms or Programmable	29.4 Arms or Programmable
Over Voltage Protection	504 Vrms / 735 Vdc	
Over Temp.Protection	Yes	
OPERATION MODE		
Constant Current Mode for Sine-Wave		
Range	0 A to 18.75 A	0 A to 28 A
Resolution	0.3725 mA / 16 bits	0.5 mA / 16 bits
Accuracy	±(0.1 % of setting + 0.2 % of range) @ 50/60 Hz, ±0.5 % of (setting + range) @ DC and 400 Hz	
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave		
Range	0 A to 18.75 A	0 A to 28 A
Resolution	0.3125 mA/ 16 bits	0.5 mA/ 16 bits
Accuracy	±(0.1 % of setting + 0.2 % of range) @ 50/60 Hz, ±0.5 % of (setting + range) @ DC and 400 Hz	
Constant Resistance Mode		
Range	4 ohm to 80 Kohm	2.5 ohm to 50 Kohm
Resolution *1	0.004166 mS / 16 bits	0.006666 mS / 16 bits
Accuracy	±2 % of (setting + range) @ 50/60 Hz, ±(0.5 % of setting + 2 % of range) @ DC and 400 Hz	
Constant Voltage Mode		
Range	50 Vrms to 480 Vrms / 700 Vdc	
Resolution	0.0125 V	
Accuracy	±(0.1 % of setting + 0.1 % of range)	
Constant Power Mode		
Range	2800 W	3750 W
Resolution	0.1 W	0.1 W
Accuracy *4	±0.5% of (setting+ range) @ 50/60 Hz,±2 % of (setting+ range)	
CREST FACTOR (CC & CP MODE ONLY)		
Range	√2 to 5	
Resolution	0.1	
Accuracy	(0.5 % /Irms) +1 % FS	
POWER FACTOR (CC&CP MODE ONLY)		
Range	0 to 1 Lag or Lead	
Resolution	0.01	
Accuracy	1 % FS	
TEST MODE		
UPS Efficient Measurement	Non-Linear Mode	
Operating Frequency	Auto, 40 Hz to 70 Hz	
CurrentRange	0 A to 18.75 A	0 A to 28 A
PF Range	0 to 1	
Measuring Efficiency For PV Systems, Power Conditioners for THD 80 %	Resistive+ Non-Linear Mode	
Operating Frequency	Auto, 40 Hz to 70 Hz	
CurrentRange	0 A to 18.75 A	0 A to 28 A
Resistive Range	4 ohm to 80 Kohm	2.5 ohm to 50 Kohm
UPS Back-Up Function (CC,LIN,CR,CP)		
UVF (VTH)	50 Vrms to 480 Vrms / 700 Vdc	
UPS Back-Up Time	1 Sec to 99999 Sec (>27 H)	
Battery Discharge Function (CC,LIN,CR,CP)		
UVF (VTH)	50 Vrms to 480 Vrms / 700 Vdc	
BatteryDischarge Time	1 Sec to 99999 Sec (>27 H)	
UPS Transfer Time		
CurrentRange	0 A to 18.75 A	0 A to 28 A
UVF (VTH)	2.5 V	
Time Range	0.15 ms to 999.99 ms	
Fuse Test Mode		
Max. Current	Turbo OFF (CC1 to 3)	18.75Arms
	Turbo ON (CC3)	28 Arms
	Turbo ON (CC1 to 2)	37.5 Arms (x2) *3
Trip & Non-Trip Time	Turbo OFF (Time1 to 3)	0.01 Sec to 333.33 Sec
	Turbo ON (Time1 to 2)	0.01 Sec to 0.50 Sec
	Turbo ON (Time3)	0.01 Sec to 600.00 Sec
OFF Time		0.1 Sec to 999.9 Sec
Meas. Accuracy		± 0.003 Sec
RepeatCycle		0 to 99999
Short/OPP/OCP Test Function		
ShortTime	Turbo OFF	0.1 Sec to 10 Sec or Cont.
	Turbo ON	0.1 Sec to 1 Sec
OPP/OCP Step Time	Turbo OFF	100 ms
	Turbo ON	100 ms, upto 10 Steps
OCP Istop	Turbo OFF	18.75 Arms
	Turbo ON	37.5 Arms
OPP Pstop	Turbo OFF	2800 W
	Turbo ON	5600 W
		7500 W

PEL-022 GPIB Card



PEL-023 RS-232 Card



PEL-024 LAN Card



PEL-025 USB Card



PEL-028 HANDLES, U-shaped handle (for AEL-5006/5008/5012/5015)



PEL-029 HANDLES Rack Accessories (for AEL-5002/5003/5004)



AC & DC Electronic Load

SPECIFICATIONS

	AEL-5003-480-18.75	AEL-5004-480-28
Programmable Inrush Current Simulation: Istart-Istop/ Tsep		
Istart, Inrush Start Current	0 A to 37.5 A	0 A to 56 A
Inrush Step Time		0.1 ms to 100 ms
Istop, Inrush Stop Current	0 A to 18.75 A	0 A to 28 A
Programmable Surge Current Simulation S1/T1 - S2/T2 - S3/T3		
S1 and S2 Current	0 A to 37.5 A	0 A to 56 A
T1 and T2 Time		0.01 Sec to 0.5 Sec
S3 Current	0 A to 18.75 A	0 A to 28 A
T3 Time		0.01 Sec to 9.99 Sec or Cont.
MEASUREMENTS		
VOLTAGE READBACK V METER		
Range		700 V
Resolution		0.0125 V
Accuracy	± 0.05 % of (reading + range)	
Parameter	Vrms, V Max/Min, ±Vpk	
CURRENT READBACK A METER		
Range	9.375 Arms/18.75 Arms	14 Arms/28 Arms
Resolution	0.2 mA/0.4 mA	0.3 mA/0.6 mA
Accuracy	± 0.05 % of (reading + range) @ 50/60 Hz	
Parameter	Irms, I Max/Min, ±Ipk	
WATT READBACK W METER		
Range	2800 W	3750 W
Resolution	0.05 W	0.0625 W
Accuracy *4	±0.5 % of (reading+ range) @ 50/60 Hz, ±2 % of (reading+ range)	
VA METER	Vrmsx Arms Correspond To Vrms and Arms	
POWER FACTOR METER		
Range		± 0.000 to 1.000
Accuracy	±(0.002±(0.001/PF) x F)	
Frequency METER (Hz)		
Range		DC, 40 Hz to 70 Hz
Accuracy	0.1 %	
Other Parameter METER	VA, VAR, CF_I, Ipeak, Imax, Imin, Vmax, Vmin, IHD, VHD, ITHD, VTHD	
OTHERS		
Startup Loading	Yes, Power on loading during Inverter / UPS startup	
Load ON / OFF Angle	0 to 359 degree can be programmed for the angle of load ON and load OFF loading	
Half Cycle and SCR/TRIAC Loading	Positive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed	
Master/Slave (3 Phase or Parallel)	Yes, 1 master and upto 7 slave units	
External Programming Input (Option)	FS / 10 Vdc, Resolution 0.1 V	
External SYNC Input	TTL	
Vmonitor (Isolated)	± 700 V /± 10 V	
Imonitor (Isolated)	± 56.25 Apk / ± 10 Vpk	± 84 Apk / ± 10 Vpk
Interface (Option)	GPIB, RS-232, LAN, USB	
MAX. Power Consumption	150 VA	
Operation Temperature *2	0 °C to 40 °C	
Current of Input Impedance (mA) @ 50/60 Hz, @ 400 Hz	~V x 0.3, ~V x 2.2	~V x 0.4, ~V x 2.95
Dimension (H x W x D)	177 mm x 440 mm x 558 mm	177 mm x 440 mm x 558 mm
Weight	27.5 kg	33.5 kg

*1 ms (millisiemens) is the unit of conductance(G), one siemens equal to 1/Ω

*2 Operating temperature range is 0 °C to 40 °C, all specification apply for 25 °C±5 °C. Except as noted

*3 Turbo mode for up to 2X Current rating & Power rating support Fuse, Short/OCP/OPP test function

*4 The specification apply for current less than 20 Arms

* All specifications apply for 50/60 Hz.

* All specifications subject to change without notice.

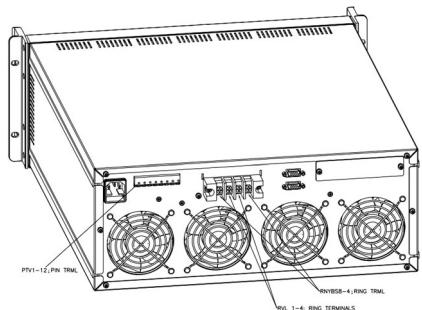
Input AC Power : 100 Vac to 230 Vac ± 10 %, 50/60 Hz

Cooling : Advanced Fan Cooled

STANDARD ACCESSORIES

HD-DSUB 15 PIN Parallel Cable x 1

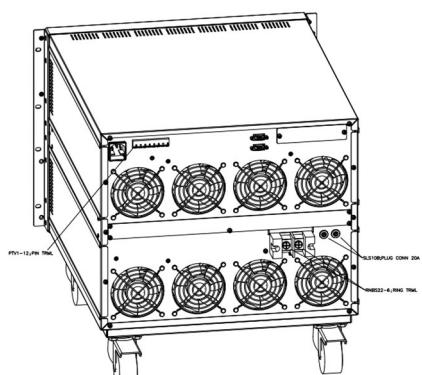
PTV1-12 PIN TRML : Please refer to Fig.1 x 6



AEL-5002-xxx-18.75/AEL-5003-xxx-28/AEL-5004-xxx-37.5

PVL 1-4 RING TERMINALS : Please refer to Fig.4 x 2

RNYBS8-4 RING TRML : Please refer to Fig.5 x 2



AEL-5006-xxx-56/AEL-5008-xxx-78/AEL-5012-xxx-112.5/

AEL-5015-xxx-112.5/AEL-5019-xxx-112.5/AEL-5023-xxx-112.5

SLS10B RED PLUG CONN 20A RED : Please refer to Fig.2;

The terminal is used for Vsense x 1

SLS10B BLK PLUG CONN 20A BLK : Please refer to Fig.2;

The terminal is used for Vsense x 1

RNB S22-6 RING TRML, #4 : Please refer to Fig.3 x 2

Fig. 1

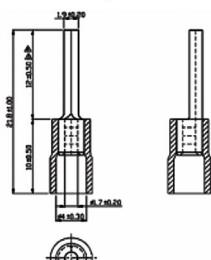


Fig. 2

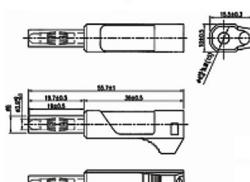


Fig. 3

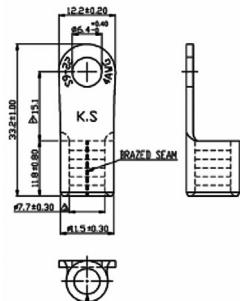


Fig. 4

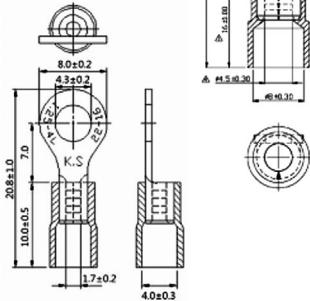
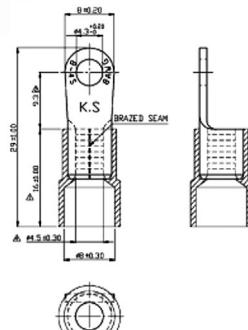


Fig. 5



AC & DC Electronic Load

ORDERING INFORMATION

AEL-5002-350-18.75	350 V / 18.75 A / 1875 W	AC & DC Electronic Load
AEL-5003-350-28	350 V / 28 A / 2800 W	AC & DC Electronic Load
AEL-5004-350-37.5	350 V / 37.5 A / 3750 W	AC & DC Electronic Load
AEL-5006-350-56	350 V / 56 A / 5600 W	AC & DC Electronic Load
AEL-5008-350-75	350 V / 75 A / 7500 W	AC & DC Electronic Load
AEL-5012-350-112.5	350 V / 112.5 A / 11250 W	AC & DC Electronic Load
AEL-5015-350-112.5	350 V / 112.5 A / 15000 W	AC & DC Electronic Load
AEL-5019-350-112.5	350 V / 112.5 A / 18750 W	AC & DC Electronic Load
AEL-5023-350-112.5	350 V / 112.5 A / 22500 W	AC & DC Electronic Load
AEL-5002-425-18.75	425 V / 18.75 A / 1875 W	AC & DC Electronic Load
AEL-5003-425-28	425 V / 28 A / 2800 W	AC & DC Electronic Load
AEL-5004-425-37.5	425 V / 37.5 A / 3750 W	AC & DC Electronic Load
AEL-5006-425-56	425 V / 56 A / 5600 W	AC & DC Electronic Load
AEL-5008-425-75	425 V / 75 A / 7500 W	AC & DC Electronic Load
AEL-5012-425-112.5	425 V / 112.5 A / 11250 W	AC & DC Electronic Load
AEL-5015-425-112.5	425 V / 112.5 A / 15000 W	AC & DC Electronic Load
AEL-5019-425-112.5	425 V / 112.5 A / 18750 W	AC & DC Electronic Load
AEL-5023-425-112.5	425 V / 112.5 A / 22500 W	AC & DC Electronic Load
AEL-5003-480-18.75	480 V / 18.75 A / 2800 W	AC & DC Electronic Load
AEL-5004-480-28	480 V / 28 A / 3750 W	AC & DC Electronic Load

AEL-5015-425-112.5

Power rating: 15-> 15kW

Maximum output current:
112.5-> 112.5A

Maximum output voltage:
425-> 425V

OPTIONAL ACCESSORIES

PEL-022	GPIB Card	GTL-246	USB Cable, USB 2.0, A-B Type, 1200 mm
PEL-023	RS-232 Card	GTL-248	GPIB Cable, Double Shielded, 2000 mm
PEL-024	LAN Card	GTL-250	GPIB Cable, Double Shielded, 600 mm
PEL-025	USB Card		
PEL-028	HANDLES, U-shaped handle(fixed to the bracket) (for AEL-5006/5008/5012/5015)		
PEL-029	HANDLES Rack Accessories(for AEL-5002/5003/5004)		
PEL-030	GPIB+RS-232 Card		

Note: * Regarding the product delivery date, please contact your regional sales representative.

Specifications subject to change without notice.

AEL-5000ID2BH_202507_1000

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