



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(V_{rms} , V_{peak} , $V_{max.}$, $V_{min.}$), Current Value(I_{rms} , I_{peak} , $I_{max.}$, $I_{min.}$), 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(Inrush 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

GW INSTEK
Simply Reliable



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AC & DC Electronic Load

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



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)*	18.75 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)*	
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)*	50 Vrms to 425 Vrms / 600 Vdc
AEL-5006-425-56	5600 W	11200 W (x2)*	56.0 Arms / 168 Apeak	112.0 Arms / 168 Apeak (x2)*	
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)*	
AEL-5019-425-112.5	18750 W	37500 W (x2)*	112.5 Arms / 337.5 Apeak	225 Arms / 337.5 Apeak (x2)*	50 Vrms to 480 Vrms / 700 Vdc
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)*	
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/Undershoot 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

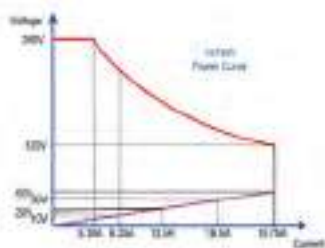
Rear Panel

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					

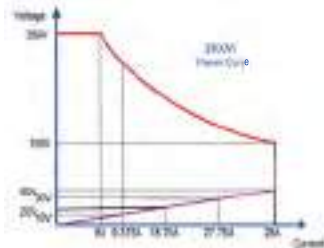


AC & DC Electronic Load

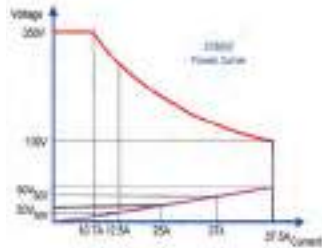
POWER CURVE



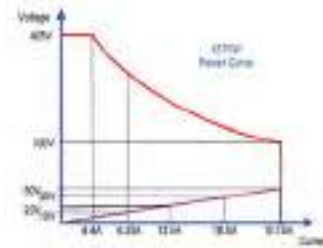
AEL-5002-350-18.75



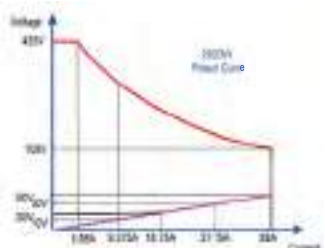
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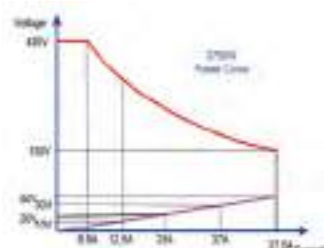
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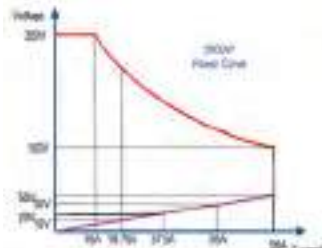
AEL-5002-425-18.75



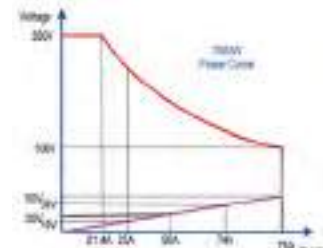
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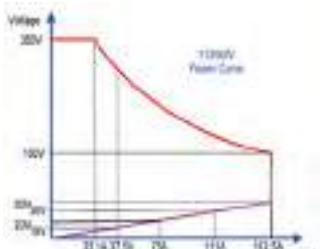
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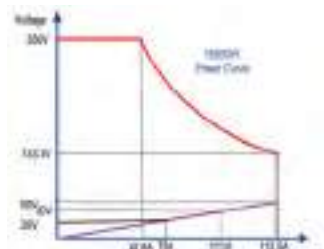
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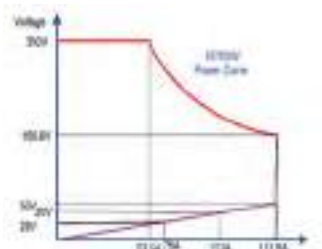
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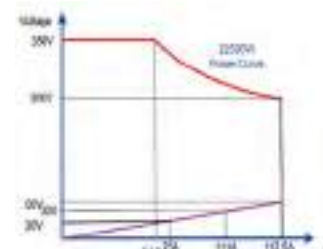
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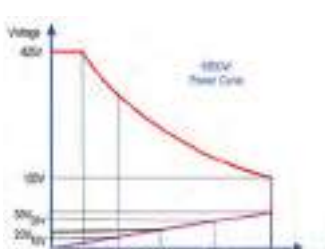
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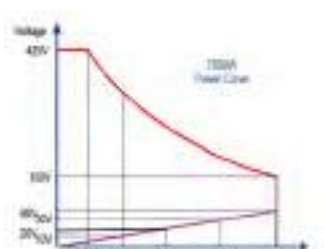
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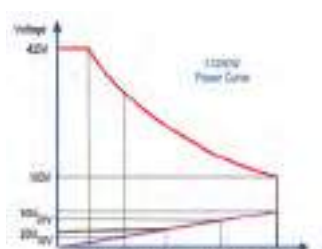
AEL-5023-350-112.5



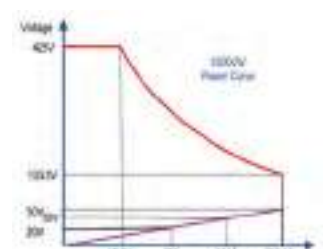
AEL-5006-425-56



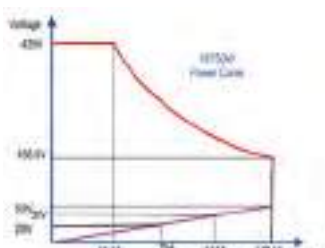
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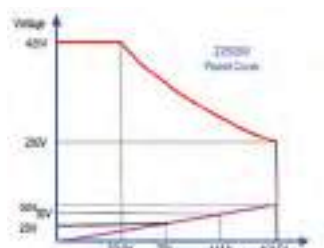
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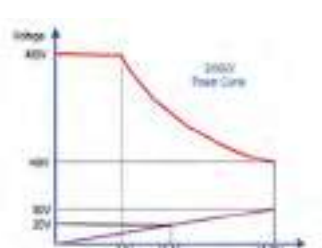
AEL-5015-425-112.5



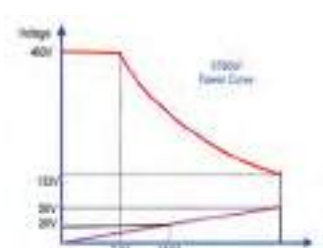
AEL-5019-425-112.5



AEL-5023-425-112.5



AEL-5003-480-18.75

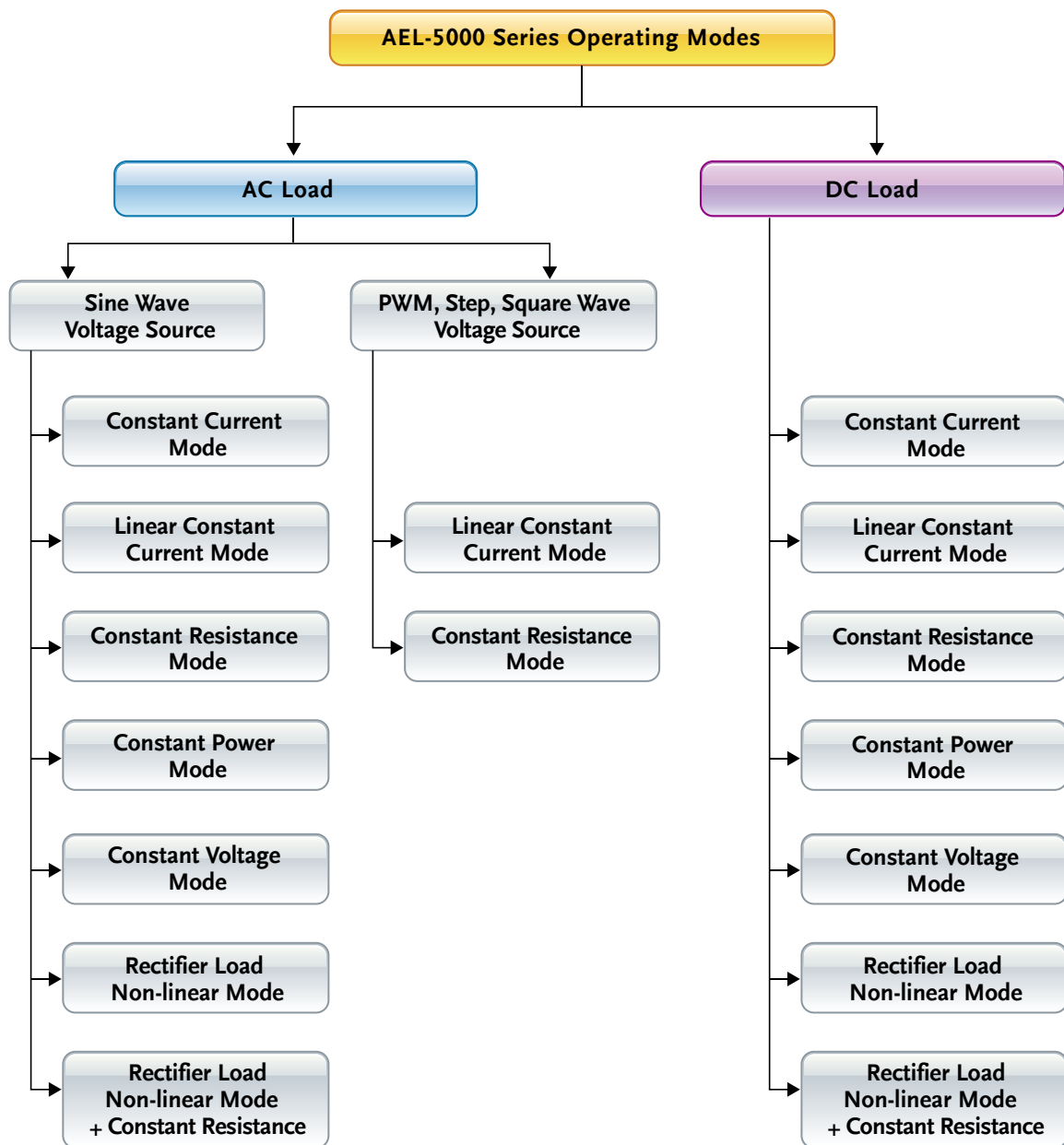


AEL-5004-480-28

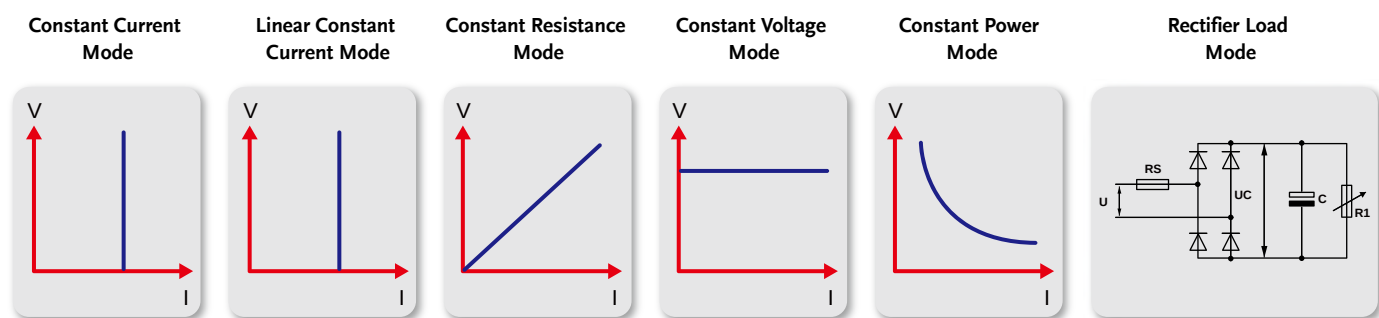


AC & DC Electronic Load

COMPLETE AC AND DC LOAD MODES



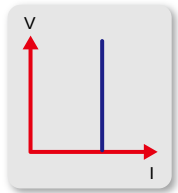
AC LOAD MODE



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.



CC Mode



CC Mode, CF = 2



CC Mode, CF = 5

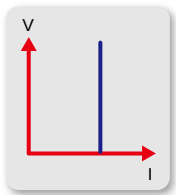


CC Mode, CF = +0.5



CC Mode, CF = -0.5

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.



Linear CC Mode



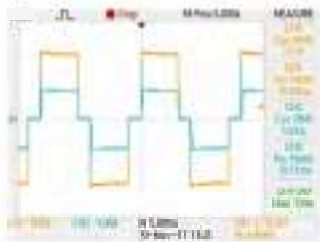
Linear CC Mode, PWM 10 A 2.5 Hz to 250 Hz



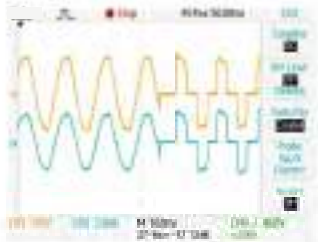
Linear CC Mode, PWM 10 A 2.5 Hz



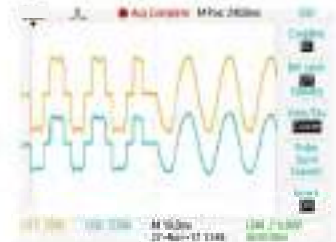
Linear CC Mode, PWM 10 A 250 Hz



Linear CC Mode, Step 10 A



Linear CC Mode, UPS Sine to Square Waveform



Linear CC Mode, UPS Sine to Square Waveform

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.



CC 10 A On-load Boot



CR 10 A On-load Boot



CV 10 A On-load Boot

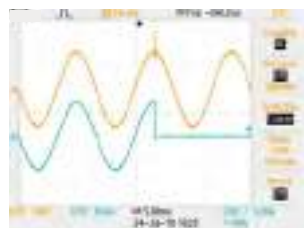


AC & DC Electronic Load

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/Undershoot response is within the desire range.



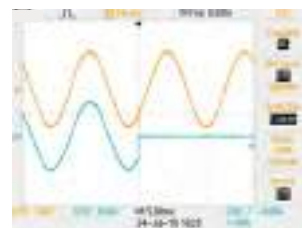
45 Degrees Loading



90 Degrees Unloading

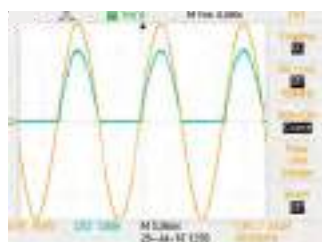


270 Degrees Loading

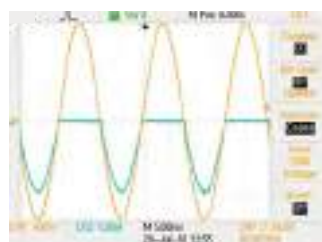


315 Degrees Unloading

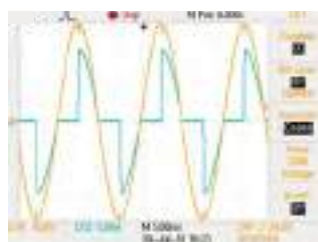
Support positive half-cycle or negative half-cycle loading ; it can be used to verify whether the Inverter output voltage remains stable when the actual appliance has only positive half-cycle or negative half-cycle load current.



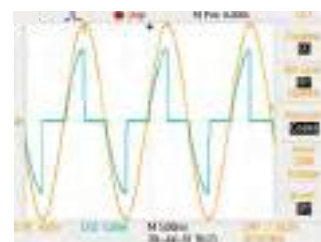
Positive Half-cycle



Negative Half-cycle

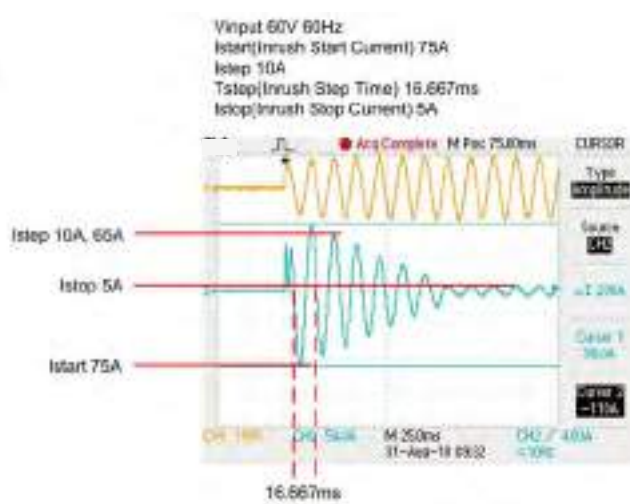
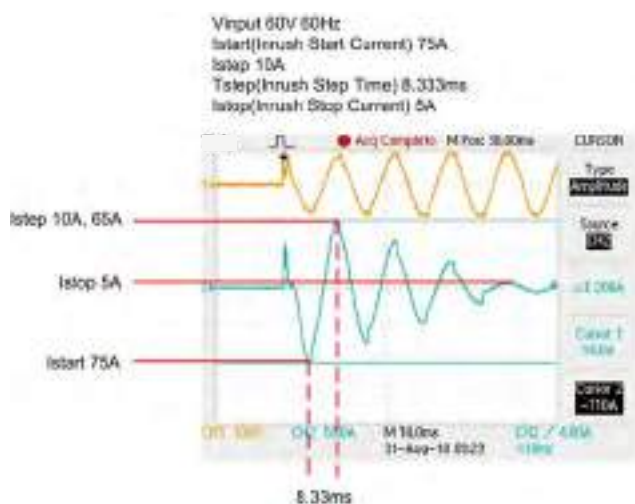


90 Degrees TRIAC/SCR Current Waveforms Leading Edge



90 Degrees Current Waveforms Leading Edge

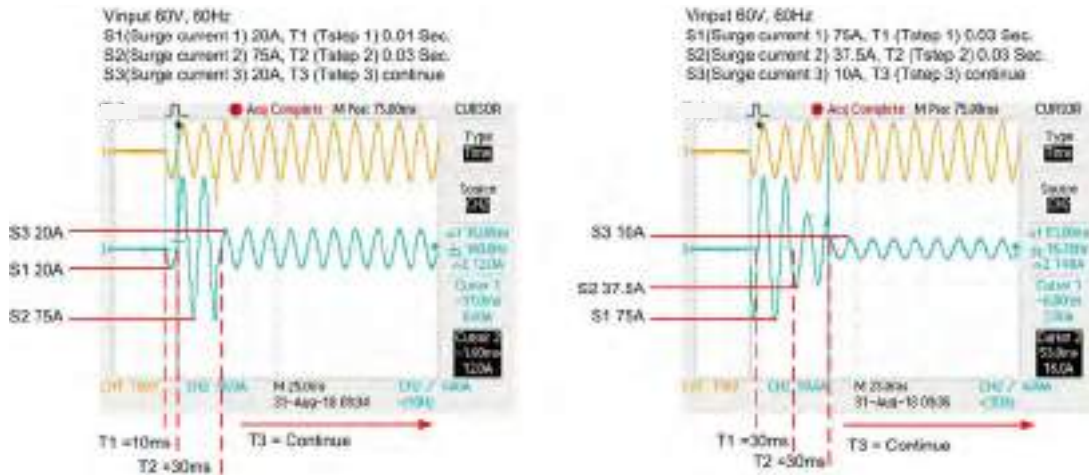
Support the Inrush Current of the inverter at startup and Power Plug-in test when the power supply is turned on to verify the Inrush Current and the sudden connection of the appliance when the power is turned on (Surge Current), to verify if whether the Inverter output voltage transient response is stable,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



Inrush Current Test at Boot



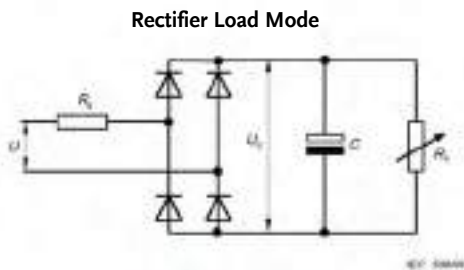
AC & DC Electronic Load



Inrush Current Test at Boot

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

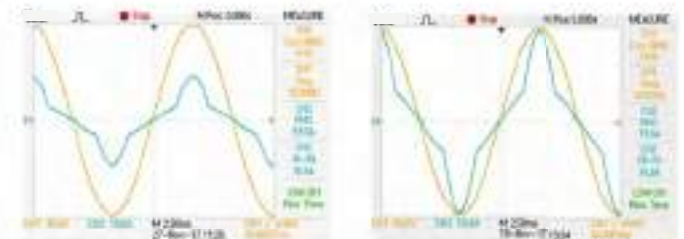
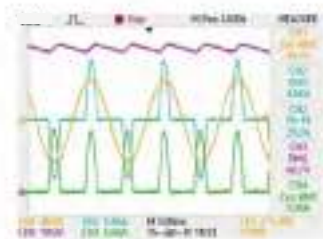
AEL-5000 Series AC & DC electronic load AC rectified load mode is fully compliance with the IEC test specification requirements for the UPS, IEC 62040-3 UPS Efficiency Measurement Non-Linear and IEC 61683 Resistive Plus Non-Linear, respectively, AEL-5000 Series AC rectifier load mode uses CC + CR load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



The Actual V / A waveform



Non-Linear CC mode for UPS Test

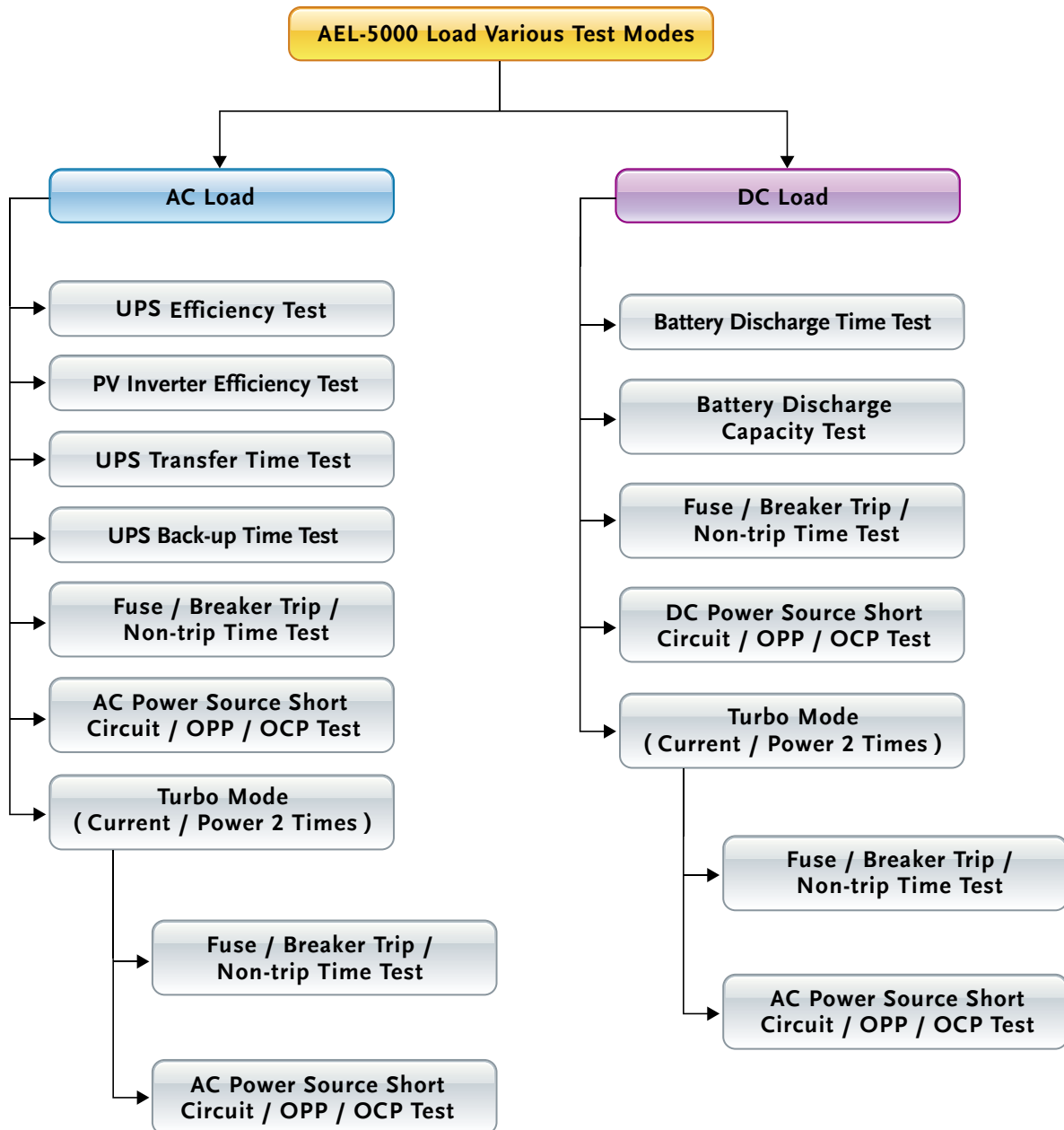


110 V, 5 A + 22 ohm Test Waveform 110 V, 10 A + 11 ohm Test Waveform
PV Inverter Test Non-Linear CC + Resistive Mode (CC+CR)

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



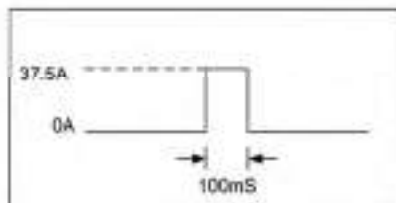
Breaker



PTC



Turbo OFF, Short 100 ms 37.5 A
Test Result Screen



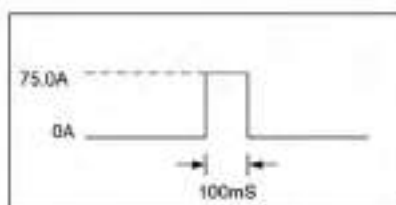
Turbo OFF, Short 100 ms 37.5 A Setting



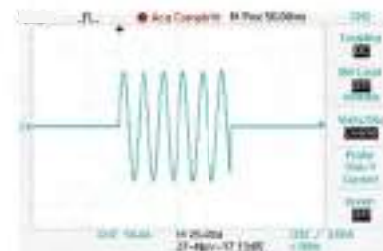
Turbo OFF, Short 100 ms 37.5 A
The Actual Test Waveform



Turbo ON, Short 100 ms 75.0 A
Test Result Screen



Turbo ON, Short 100 ms 75.0 A Setting



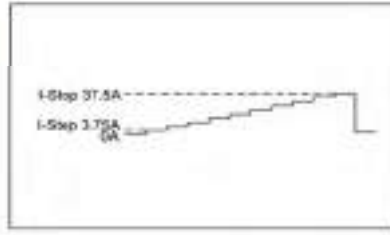
Turbo ON, Short 100 ms 75.0 A
The Actual Test Waveform



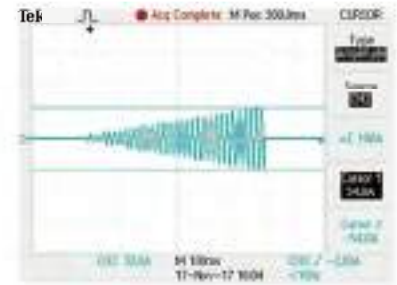
AC & DC Electronic Load



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



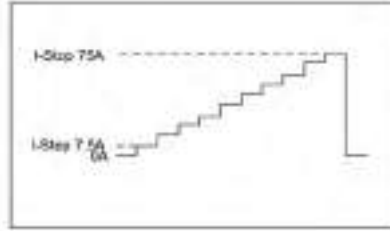
Turbo OFF, OCP Istep 3.75 A Istop 37.5 A
Setting



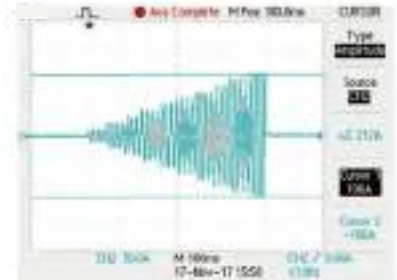
Turbo OFF, OCP Istep 3.75 A Istop 37.5 A
The Actual Test Waveform



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 Bleaker 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.

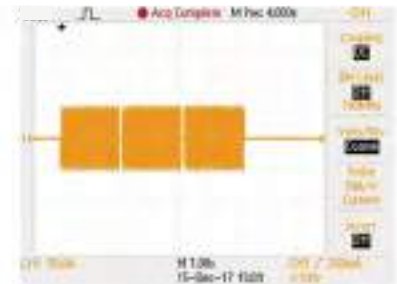
In the Non-Trip (no Blown) test, the current protection component is required to achieve non-blow action, so the test current needs to be lower than the fuse current rating that is used to verify the fuse must not blow during normal current range. When the AEL-5000 Series AC & DC electronic load is not 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



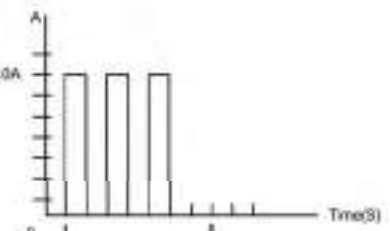
Setting : Turbo : OFF, Fuse ON
CC Pulse 37.5 A, 2 s, Test 3 Cycles



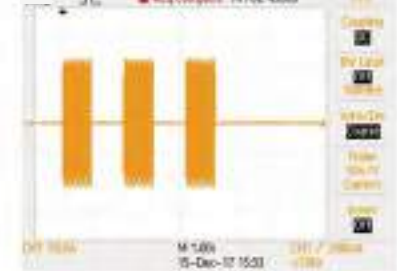
Turbo : OFF, Fuse ON, CC Pulse 37.5 A, 2 s,
Test 3 Cycles the Actual Test Waveform



Turbo ON, Fuse Mode
Test Result Screen



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



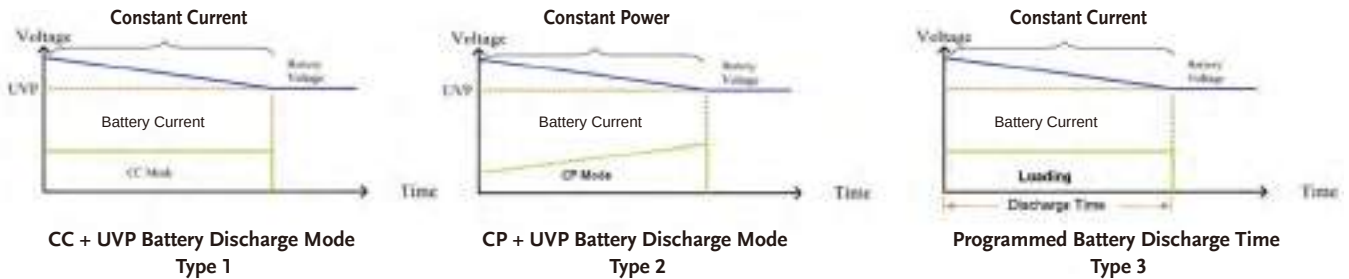
Turbo : ON, Fuse ON, CC Pulse 75 A, 1 s,
Test 3 Cycles the Actual Test Waveform



AC & DC Electronic Load

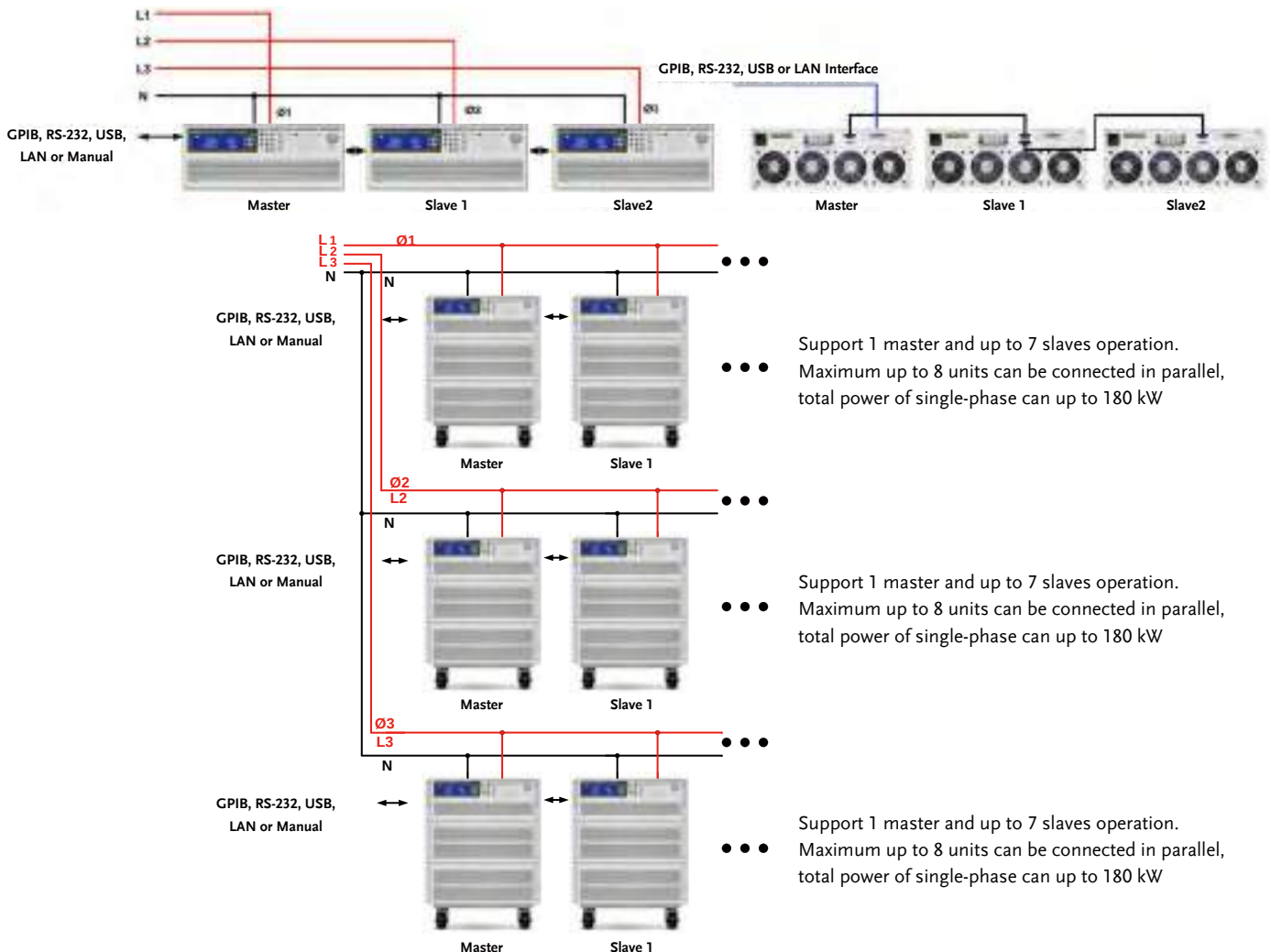
BATTERY TEST FUNCTION

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

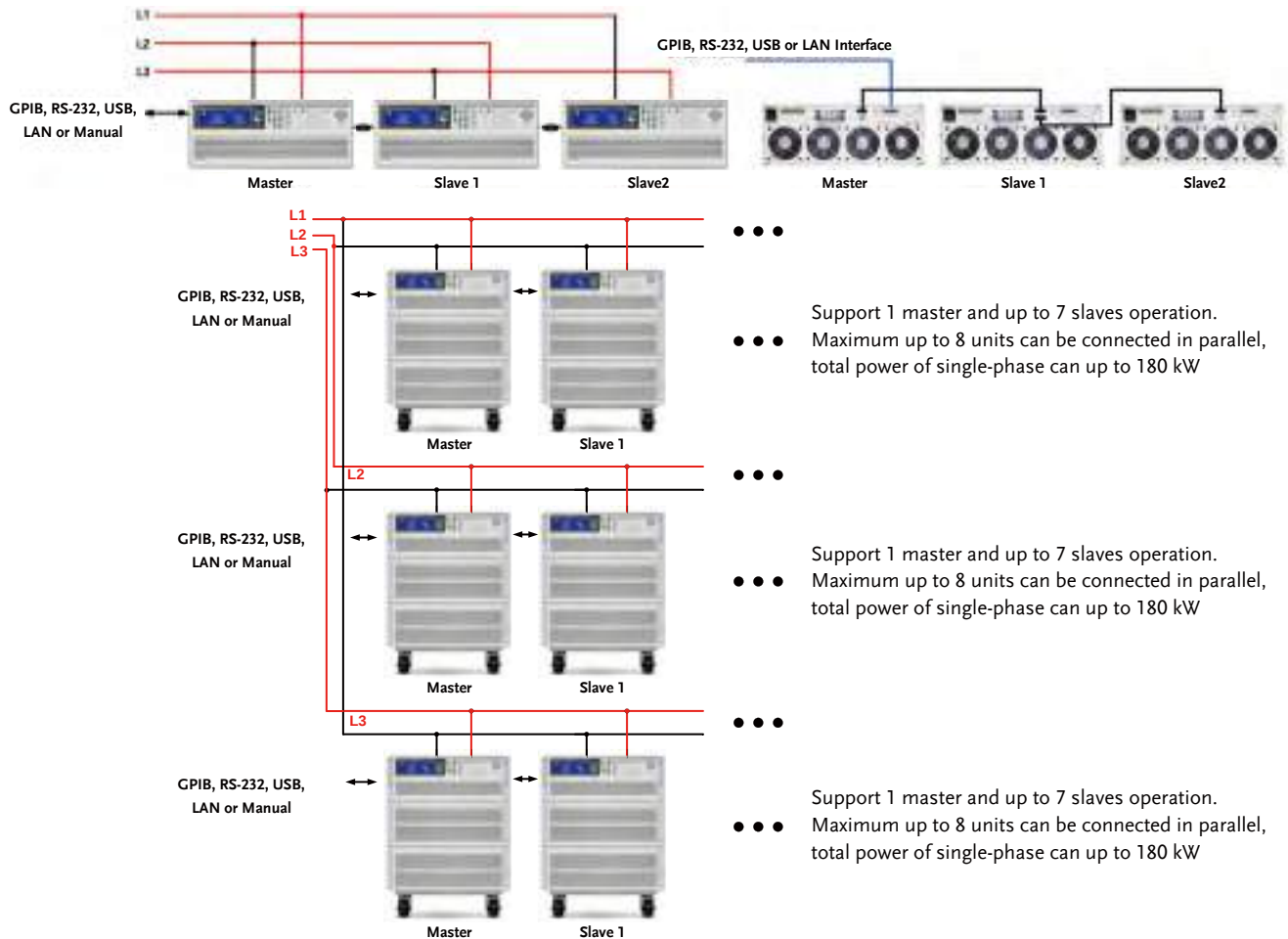
The AEL-5000 Series AC & DC load provides multiple units in parallel, three-phase applications that allows users to test applications with greater power or three-phase AC power, this is more flexibility to use the AEL-5000 Series AC & DC Electronic Load for control. In parallel / three-phase operation, 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.



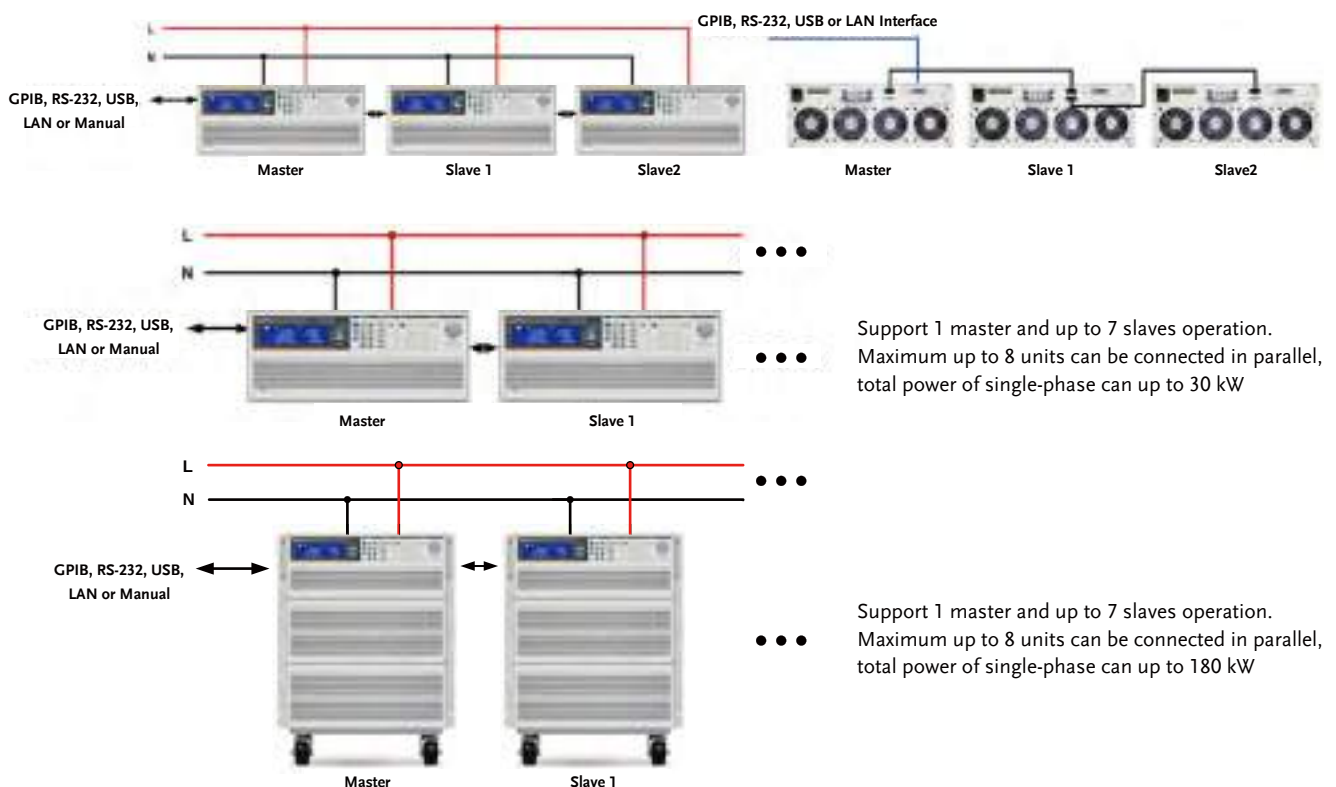
Maximum Power of Single-phase Can up to 180 kW, 3-phase Total Power up to 540 kW 3-phase Δ or Y Connection



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

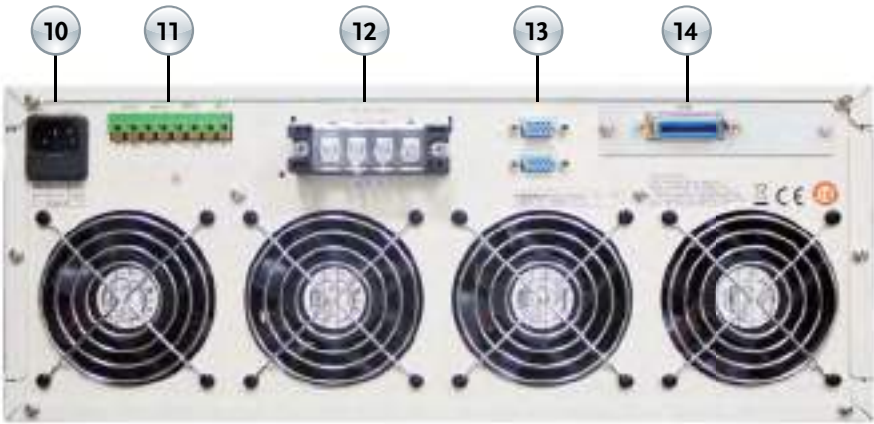


AC & DC Electronic Load

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 Volt(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
		4	Waveform library keys Can be quickly set CF $\sqrt{2}$ / 2 / 2.5 / 3 / 3.5 , +/- PF0.6 / 0.7 / 0.8 / 0.9 / 1.0 , FREQ Auto / 50 Hz / 60 Hz / 400 Hz
		5	Test function keys Can select Short / OPP / OCP / Non-L / NL-CR / Fuse / Batt (Battery Discharge) / Trans (UPS transfer time) test functions
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	6	Numeric keypad
		7	Knob setting
		8	Switch
		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 Vlotage 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 ConstantCurrent 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)					
	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 333.33 Sec			0.01 Sec to 333.33 Sec	
	Turbo ON (Time1 to 2)	0.01 Sec to 0.50 Sec			0.01 Sec to 0.50 Sec	
	Turbo ON (Time3)	0.01 Sec to 600.00 Sec			0.01 Sec to 600.00 Sec	
		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/OCF 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/OCF 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
	Turbo ON	37.5 Arms	56.0 Arms	75.0 Arms	37.5 Arms	56.0 Arms
OPP Pstop	Turbo OFF	1875 W	2800 W	3750 W	1875 W	2800 W
	Turbo ON	3750 W	5600 W	7500 W	3750 W	5600 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 75A
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 M ETER (Hz)						
Range	DC,40 Hz to 440 Hz			DC,40 Hz to 440 Hz		
Accuracy	0.1 %			0.1 %		
Other Parameter METER						
VA, VAR, CF,I, Ipeak, I max, I min 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, Resulation 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)	GPIO, RS-232, LAN, USB			GPIO, 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 CurrentProtection	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 Vlotage 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	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 ConstantCurrent 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 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	√ 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 % F S					
TEST MODE						
UPS Efficient Measurement	Non-Linear Mode					
Operating Frequency	Auto, 40 Hz to 440 Hz					
CurrentRange	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 999.99 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	0.1 Sec to 999.9 Sec					
Meas. Accuracy	±0.003 Sec					
RepeatCycle	0 to 99999					
Short/OPP/OCF Test Function						
ShortTime	Turbo OFF	0.1 Sec to 10 Sec or Cont.				
	Turbo ON	0.1 Sec to 1 Sec				
OPP/OCF Step	Turbo OFF	100 ms				
	Turbo ON	100 ms, up to 10 Steps				
OCF 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	22500 W
	Turbo ON	11200 W	15000 W	22500 W	30000 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 M ETER (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 Vlotage 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 ConstantCurrent 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						
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 Conditionersfor THD 80 %						
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 999.99 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)					
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/OCF Test Function						
ShortTime	Turbo OFF	0.1 Sec to 10 Sec or Cont.				
	Turbo ON	0.1 Sec to 1 Sec				
OPP/OCF 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	112.5Arms	112.5Arms
	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 M ETER (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 fload 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/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-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 Vlotage 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 % /lrms) +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 Conditionersfor 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)			
UVP (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)			
UVP (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
UVP (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	28 Arms
	Turbo ON (CC3)		
	Turbo ON (CC1 to 2)		
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/OCF Test Function			
ShortTime	Turbo OFF	0.1 Sec to 10 Sec or Cont.	
	Turbo ON	0.1 Sec to 1 Sec	
OPP/OCF Step Time	Turbo OFF	100 ms	
	Turbo ON	100 ms, upto 10 Steps	
OCP Istop	Turbo OFF	18.75 Arms	28.0 Arms
	Turbo ON	37.5 Arms	56.0 Arms
OPP Pstop	Turbo OFF	2800 W	3750 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

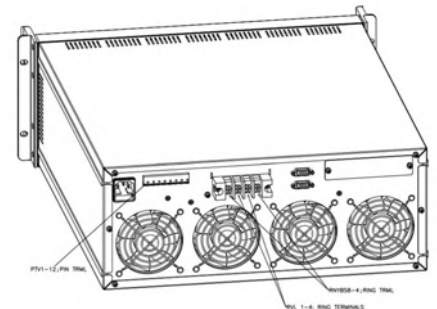
SPECIFICATIONS		
	AEL-5003-480-18.75	AEL-5004-480-28
Programmable Inrush Current Simulation: Istart-Istop/ Tsep		
Istart, Inrush StartCurrent	0 A to 37.5 A	0 A to 56 A
Inrush Step Time	0.1 ms to 100 ms	
Istop, Inrush Stop Current	0 A to 18.75 A	0 A to 28 A
Programmable Surge Current Simulation S1/T1 - 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/OC/OPP test function
 *4 The specification apply for current less than 20 Arms
 * All specifications apply for 50/60 Hz.
 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

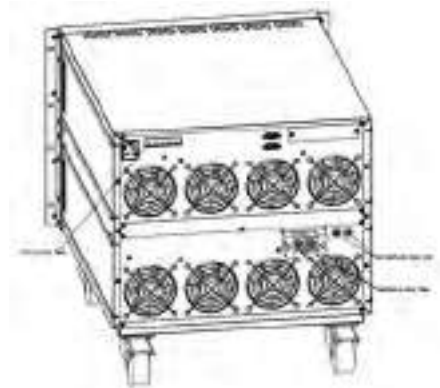
PTV1-12 PIN TRML : Please refer to Fig.1 x 6



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

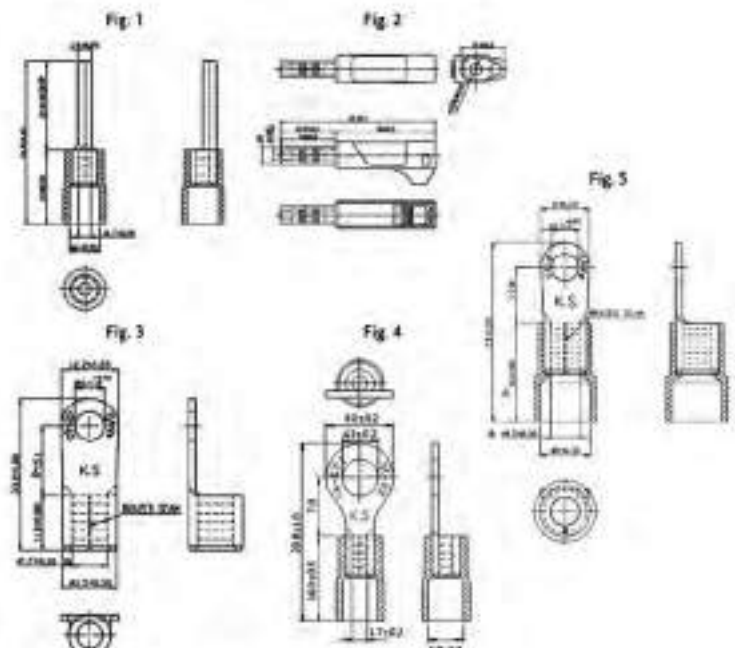
SLS10B RED PLUG CONN 20A RED : Please refer to Fig.2;

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



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



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

