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 180kW for Single-phase and 540kW for Three-phase
- Support Loading and Unloading Angle Control, Loading and Unloading Angle Control Can be set at the Full Range of 0-359 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: 1.414~5.0
- Power Factor Range: 0.1~1.0 Leading or Trailing
- Frequency Range: DC, 40~440Hz (AEL-5003-480-18.75/AEL-5004-480-28: DC, 40~70Hz), and 800Hz and 1kHz Need to be Customized
- Optional Control Interfaces: GPIB, RS-232, USB, LAN

GW INSTEK

Simply Reliable

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

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

* Power and current boost rate of Turbo ON

AC & DC Electronic Load

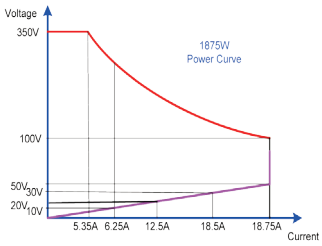
FEATURES

- 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 : 1.414~5.0
- Power factor (PF) range : 0~1 lead or (-1~0) 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 0-359 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, 40~440Hz
- 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

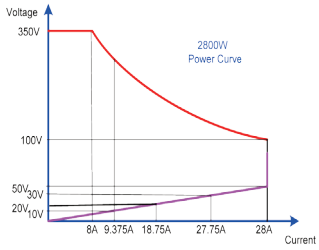
AEL-5000 Series AC & DC electronic load built-in 16-bit A/D and DSP precision measurement circuit, provides accurate measurements, measurement items have Vrms, Arms, Watt, VA, CF, PF, THD, VTHD, ITHD, Ipeak, Amax, Amin, Vmax, and Vmin In addition to these measurement functions, it also provides time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

AC & DC Electronic Load

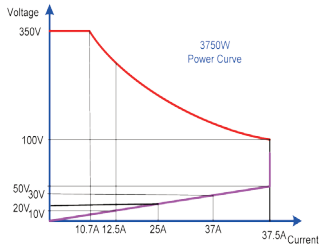
POWER CURVE



AEL-5002-350-18.75



AEL-5003-350-28



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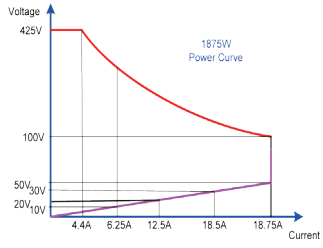
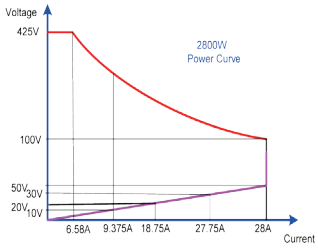


AEL-5002-425-18.75



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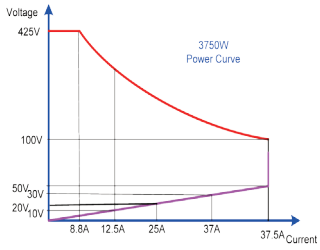
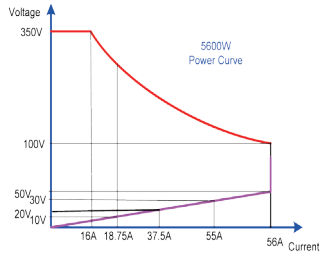
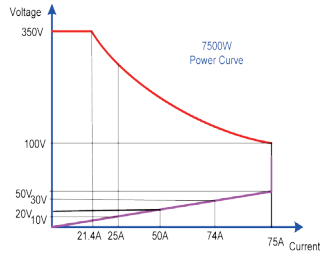


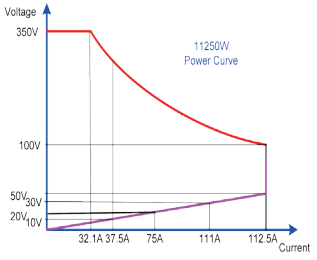
AEL-5004-425-37.5



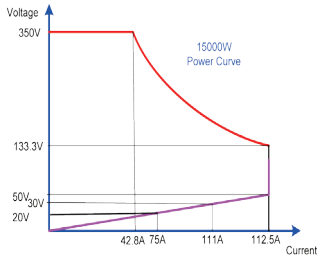
AEL-5006-350-56



AEL-5008-350-75



AEL-5012-350-112.5



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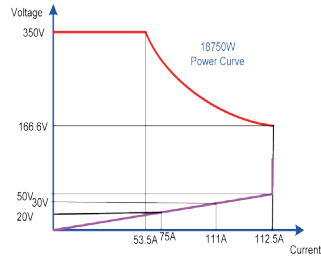
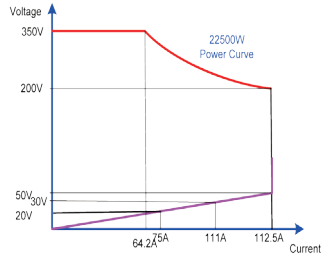
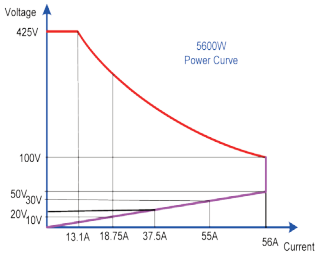


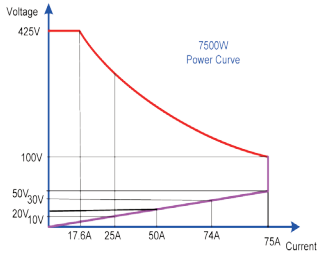
AEL-5019-350-112.5



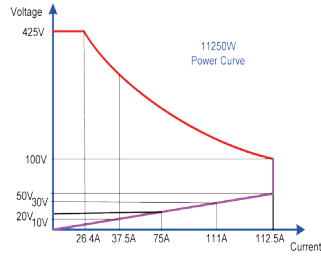
AEL-5023-350-112.5



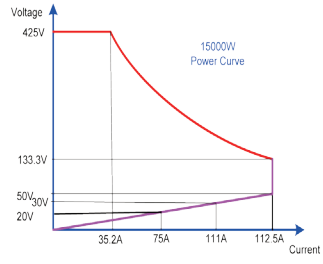
AEL-5006-425-56



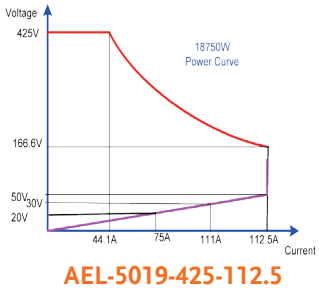
AEL-5008-425-75



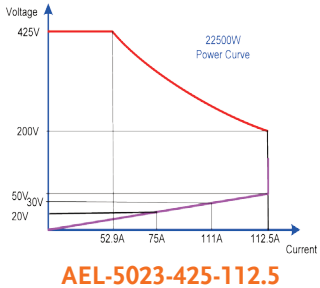
AEL-5012-425-112.5



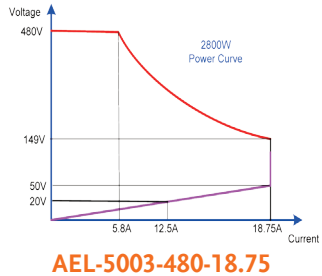
AEL-5015-425-112.5



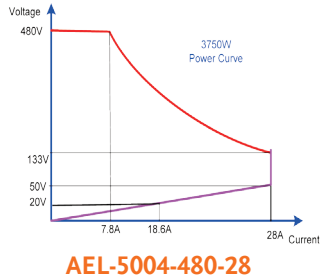
AEL-5019-425-112.5



AEL-5023-425-112.5



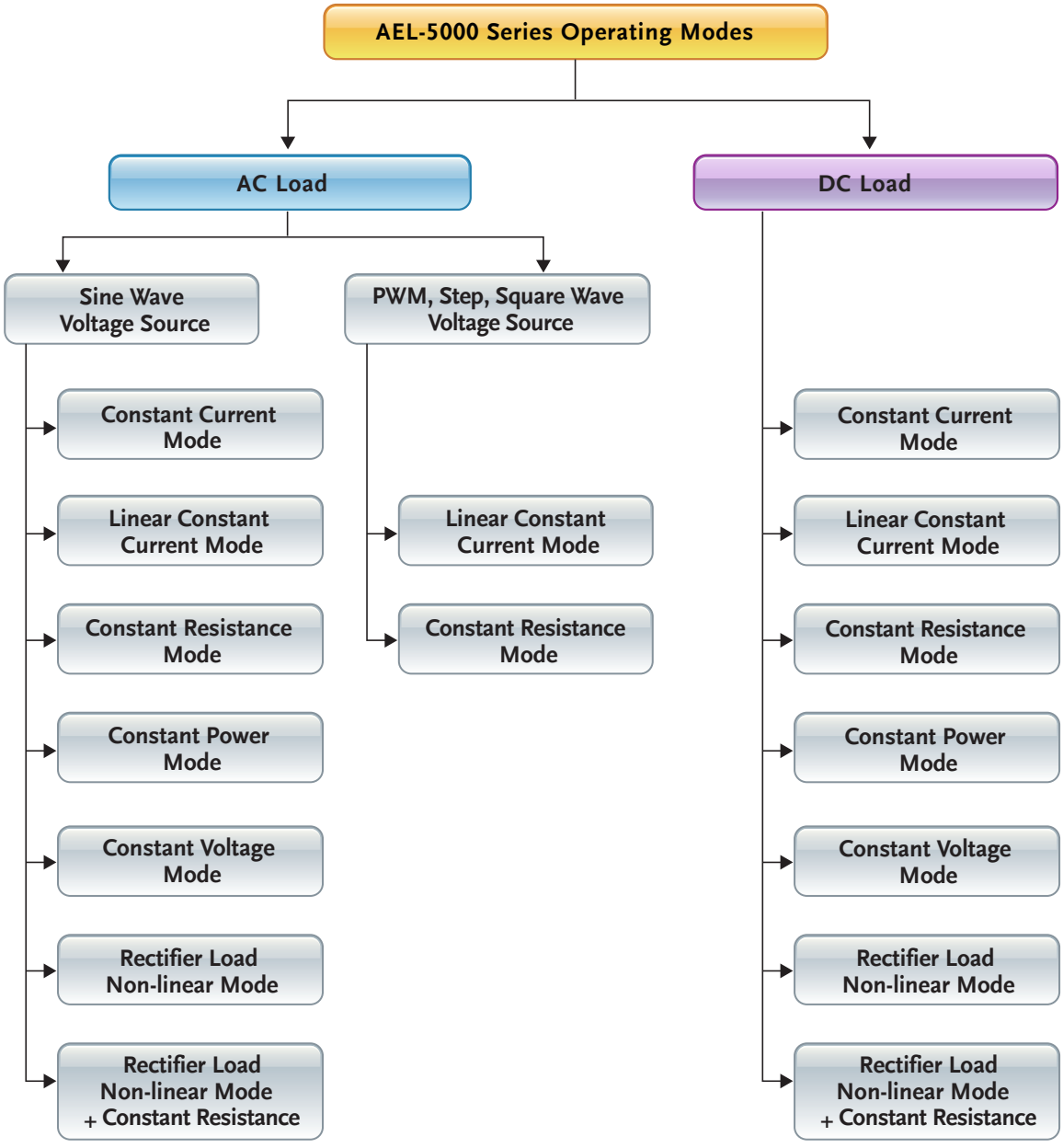
AEL-5003-480-18.75



AEL-5004-480-28

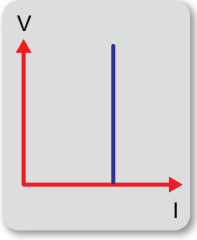
AC & DC Electronic Load

COMPLETE AC AND DC LOAD MODES

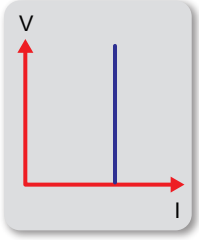


AC LOAD MODE

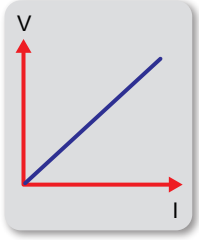
Constant Current Mode



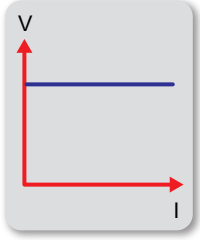
Linear Constant Current Mode



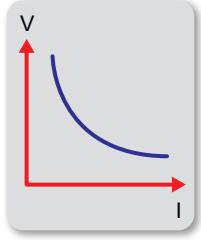
Constant Resistance Mode



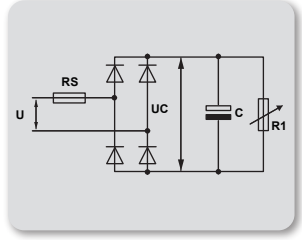
Constant Voltage Mode



Constant Power Mode



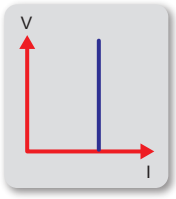
Rectifier Load Mode



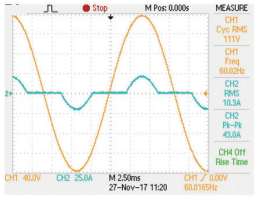
AC & DC Electronic Load

AC LOAD MODE

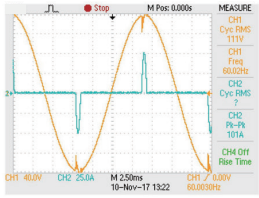
CC Mode : In the constant current mode of AC Load, can be applied to sine wave voltage source, providing CF, PF test of linear load.



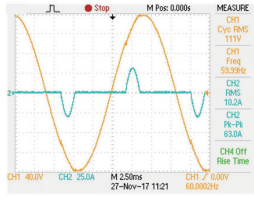
CC mode



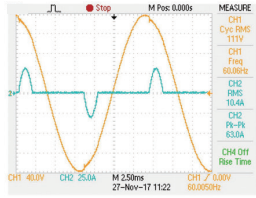
CC mode, CF = 2



CC mode, CF = 5

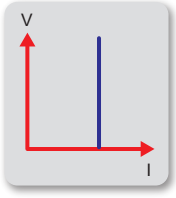


CC mode, CF = +0.5

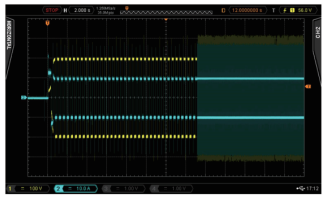


CC mode, CF = -0.5

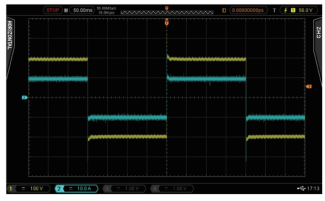
Linear Constant Current Mode : Can be applied to sine wave and non-sine wave voltage source, as shown in the PWM inverter driver, step voltage source, and off-line UPS sine wave switch to square wave, square wave switch to sine wave.



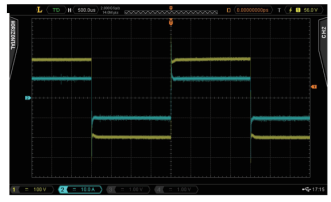
Linear CC mode



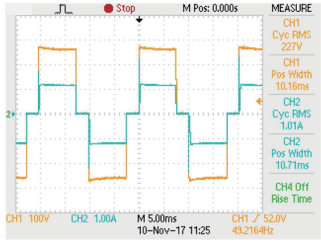
Linear CC mode, PWM 10A 2.5Hz to 250Hz



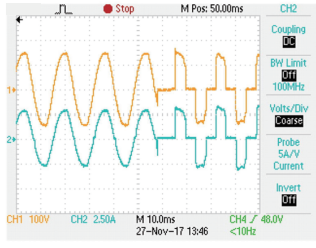
Linear CC mode, PWM 10A 2.5Hz



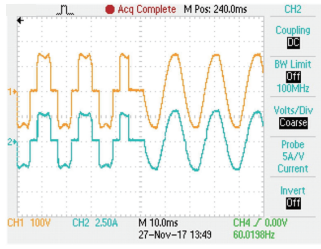
Linear CC mode, PWM 10A 250Hz



Linear CC mode, Step 10A

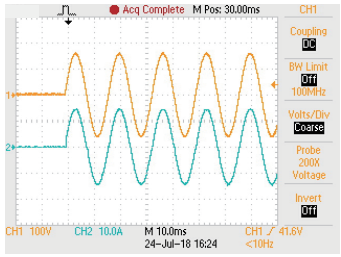


Linear CC mode, UPS Sine to Square Waveform

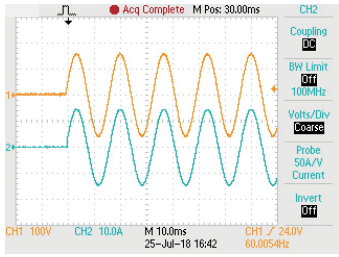


Linear CC mode, UPS Sine to Square Waveform

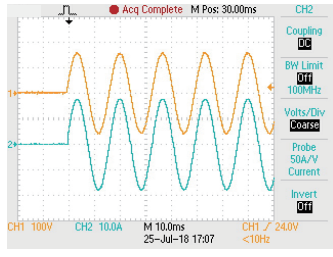
Supported on-load start-up : at first set Load ON to support on-load start-up, inverter or uninterruptible power supply is start-up directly with the set load current, used to verify whether the Inverter is stable when the load is connected during start-up.



CC 10 A on-load boot



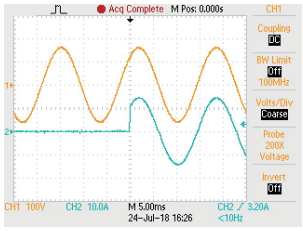
CR 10 A on-load boot



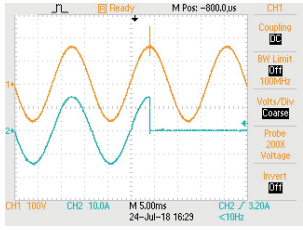
CV 10 A on-load boot

AC & DC Electronic Load

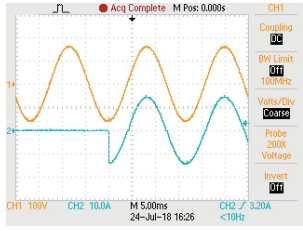
Supports the loading and unloading current angle control ; the loading and unloading current angle range of 0-359 degrees can be programmed to verify whether the Inverter output voltage transient response is stable during the actual electrical appliance is connected or turn ON / OFF randomly it can be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



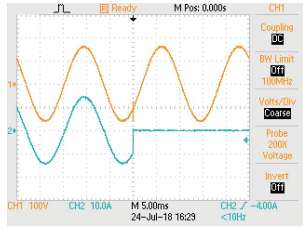
45 degrees loading



90 degrees unloading

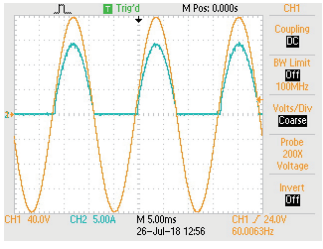


270 degrees loading

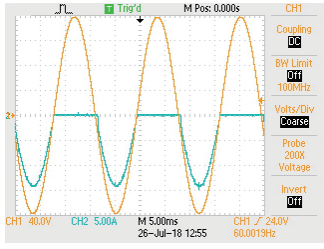


315 degrees unloading

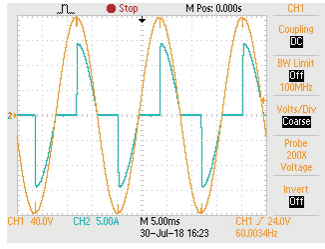
Support positive half-cycle or negative half-cycle loading ; it can be used to verify whether the Inverter output voltage remains stable when the actual appliance has only positive half-cycle or negative half-cycle load current.



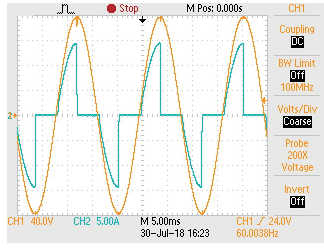
positive half-cycle



negative half-cycle

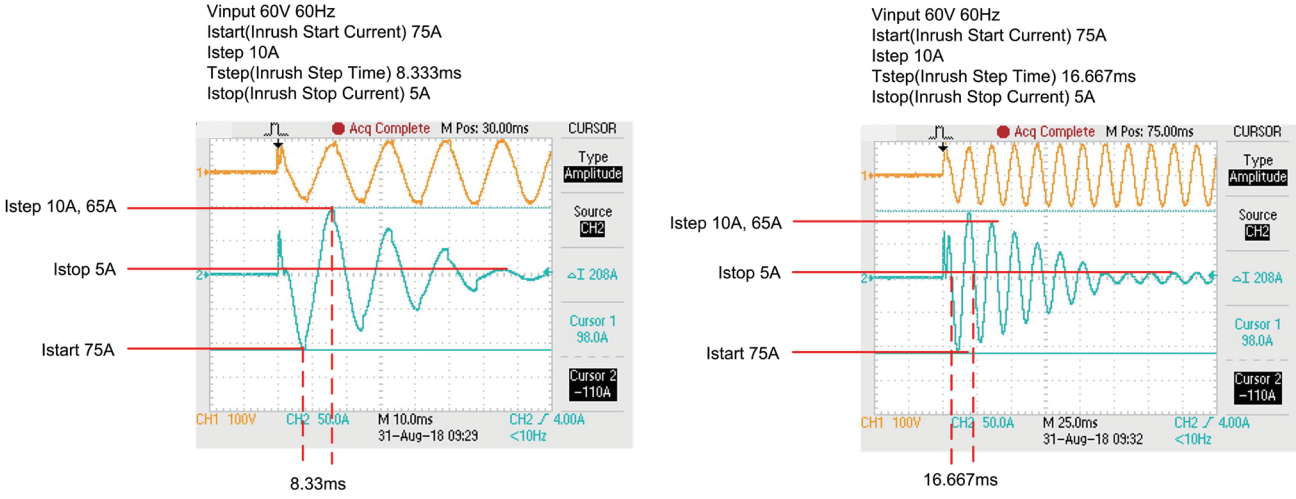


90 degrees TRIAC/SCR current waveforms Leading edge

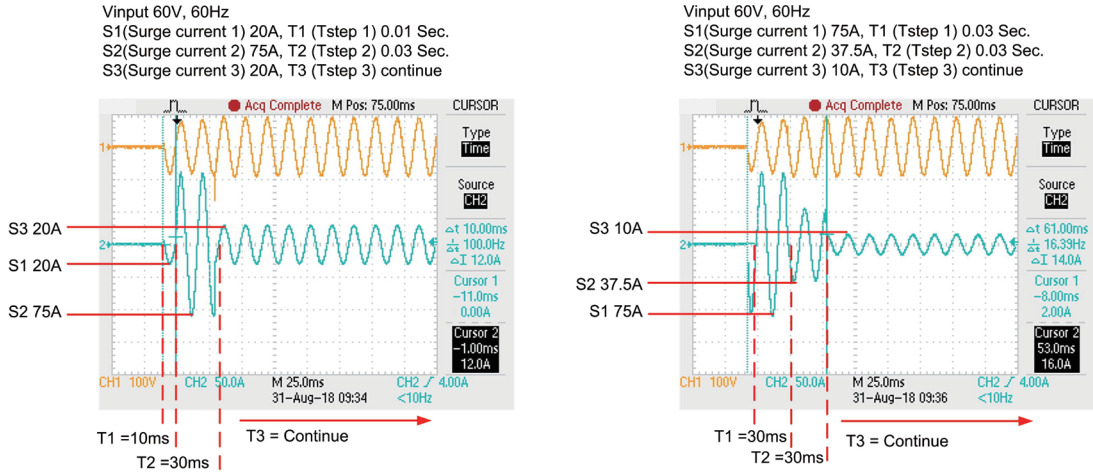


90 degrees current waveforms Leading edge

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

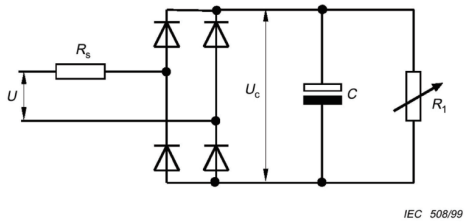


Inrush Current test at boot

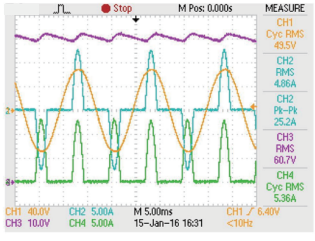
AC RECTIFIED LOAD SIMULATION MEET THE IEC62040-3 AND IEC61683 TEST SPECIFICATIONS

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.

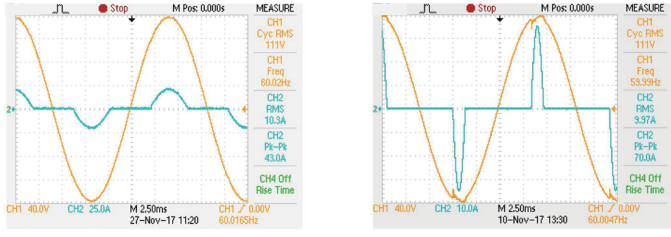
Rectifier Load Mode



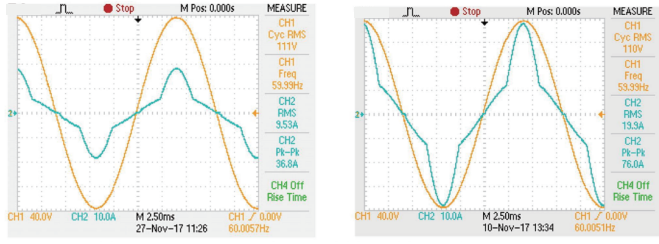
IEC 508/99



The actual V / A waveform



Non-Linear CC mode for UPS test

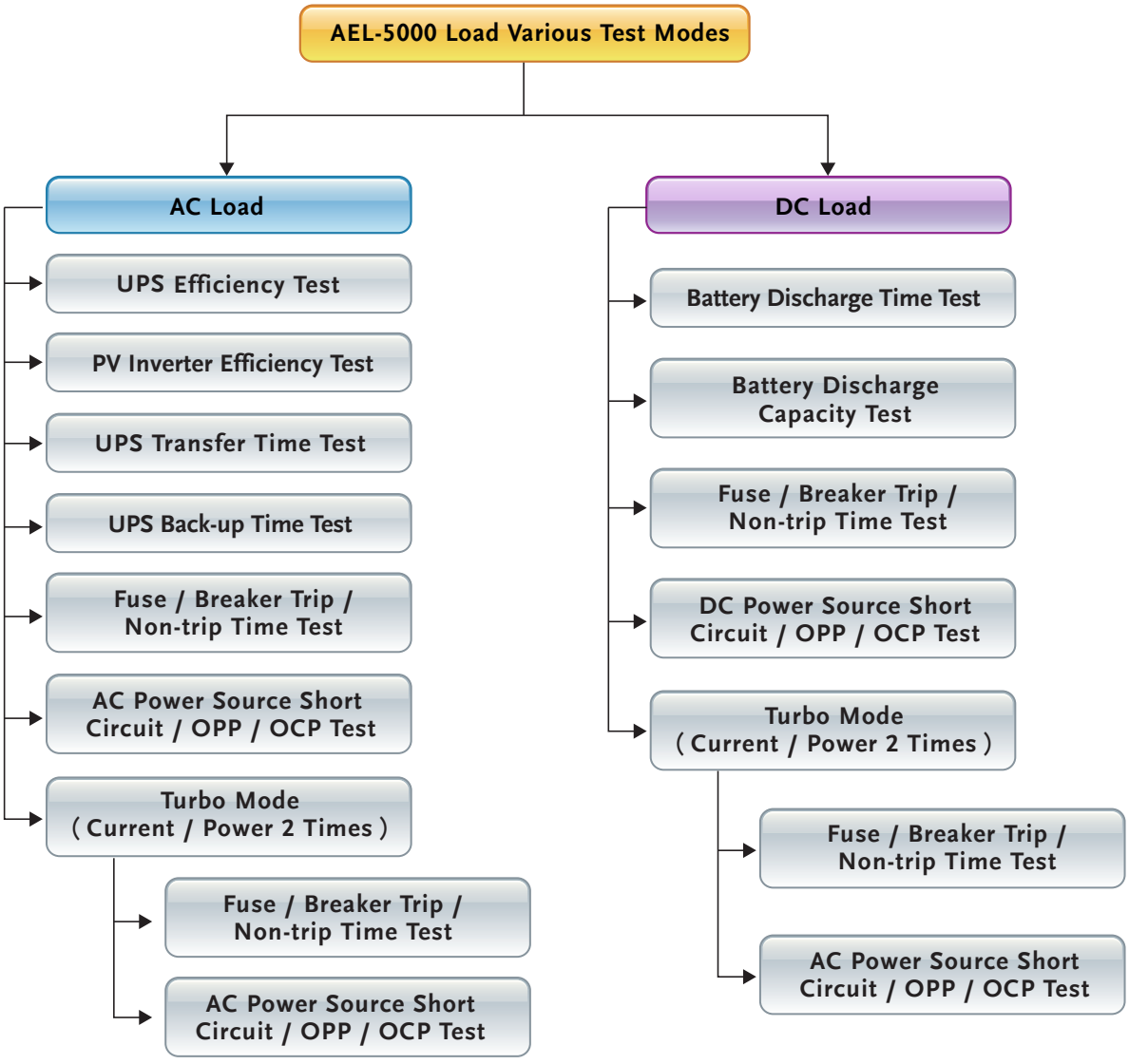


110V, 5A + 22ohm Test Waveform 110V, 10A + 11ohm Test Waveform
PV Inverter test Non-Linear CC + Resistive mode (CC+CR)

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.



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.

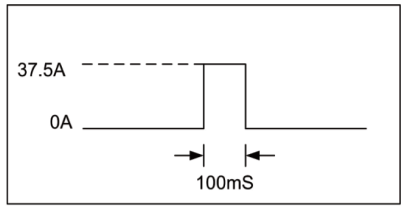
Due to this feature, the AEL-5000 Series AC & DC electronic load, in particular for the verification of current protection components, has developed a Fuse Test function to test and verify such protection element with an electronic load of rated current and power. When Turbo mode is set to ON, the test 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 75A. 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

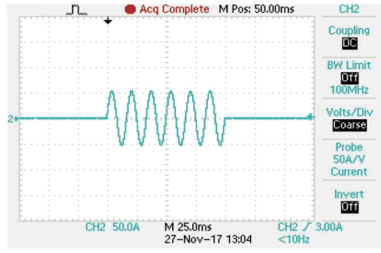
Breaker

PTC

Turbo OFF, Short 100ms 37.5A
Test result screen

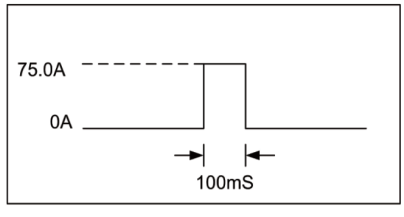


Turbo OFF, Short 100ms 37.5A Setting

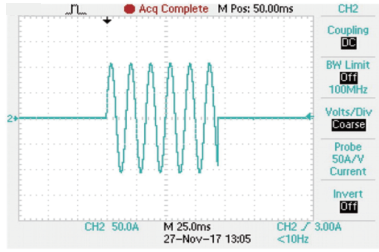


Turbo OFF, Short 100ms 37.5A
The actual test waveform

Turbo ON, Short 100ms 75.0A
Test result screen



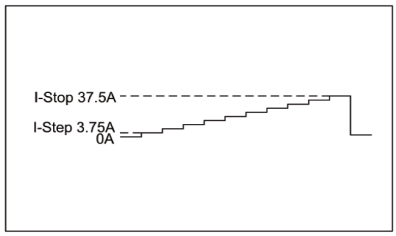
Turbo ON, Short 100ms 75.0A Setting



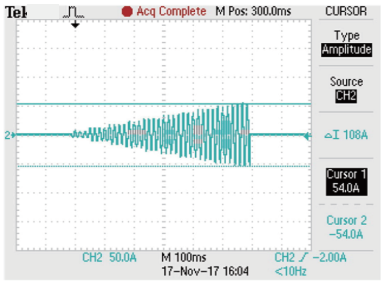
Turbo ON, Short 100ms 75.0A
The actual test waveform

AC & DC Electronic Load

Turbo OFF, OCP Istep 3.75 A Istop 37.5A
Test result screen

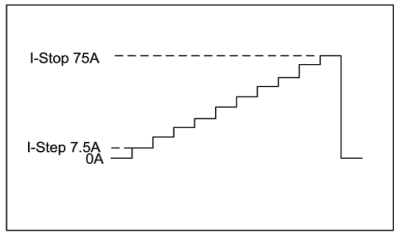


Turbo OFF, OCP Istep 3.75 A Istop 37.5A
Setting

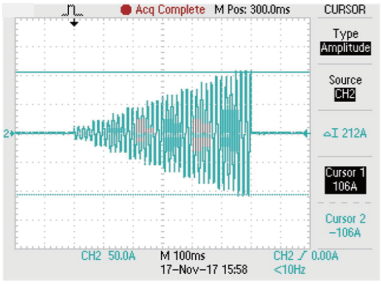


Turbo OFF, OCP Istep 3.75 A Istop 37.5A
The actual test waveform

Turbo ON, OCP Istep 7.5 A Istop 75A
Test result screen



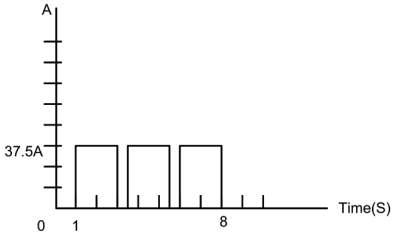
Turbo ON, OCP Istep 7.5 A Istop 75.0A
Setting



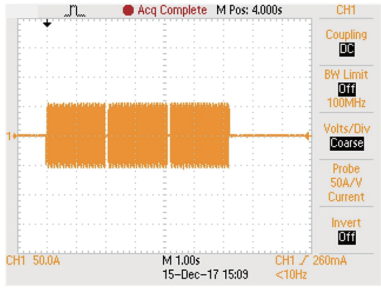
Turbo ON, OCP Istep 7.5 A Istop 75.0A
The actual test waveform

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 1.0V, 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

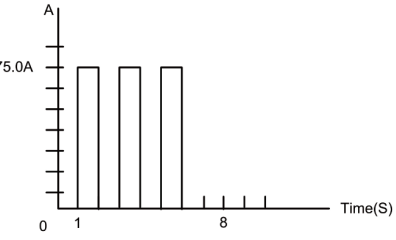


Setting：Turbo：OFF, Fuse ON
CC pulse 37.5A, 2s, Test 3 cycles

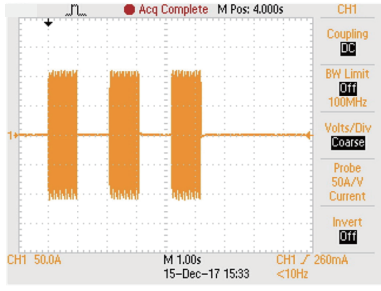


Turbo : OFF, Fuse ON, CC pulse 37.5A, 2s,
Test 3 cycles the actual test waveform

Turbo ON, Fuse mode
Test result screen



Setting：Turbo：ON, Fuse ON
CC pulse 75.0A, 1s, Test 3 cycles

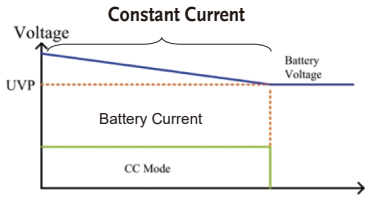


Turbo : ON, Fuse ON, CC pulse 75A, 1s,
Test 3 cycles the actual test waveform

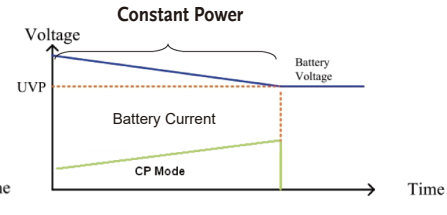
AC & DC Electronic Load

BATTERY TEST FUNCTION

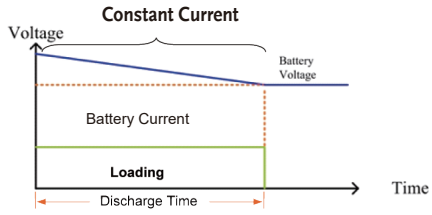
AEL-5000 Series AC & DC electronic load has built-in new TYPE1 ~ TYPE3 battery discharge test, you can select the desired battery test mode, the test results can be directly displayed on the LCD display for battery AH capacity, the voltage value after discharge and the cumulative discharge time.



CC + UVP Battery discharge mode
Type 1



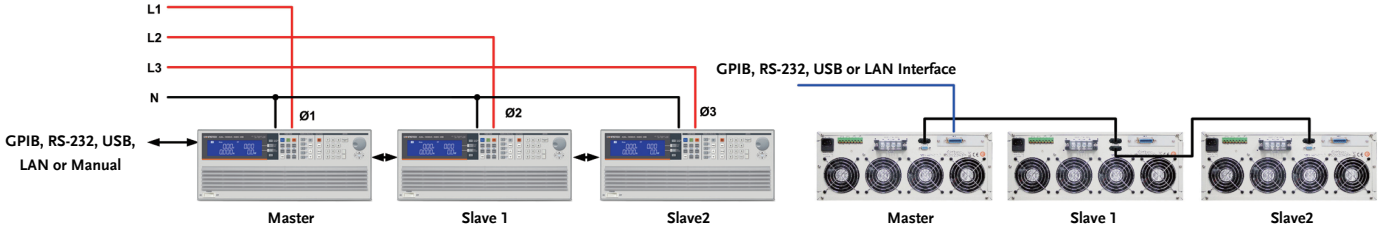
CP + UVP Battery discharge mode
Type 2

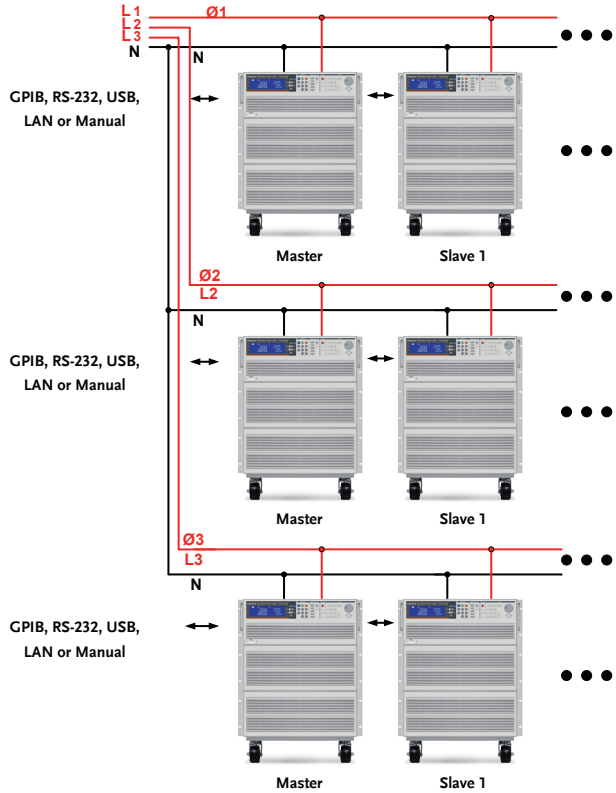


Programmed battery discharge time
Type 3

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.





Support 1 master and up to 7 slaves operation.
Maximum up to 8 units can be connected in parallel, total power of single-phase can up to 180 kW

Support 1 master and up to 7 slaves operation.
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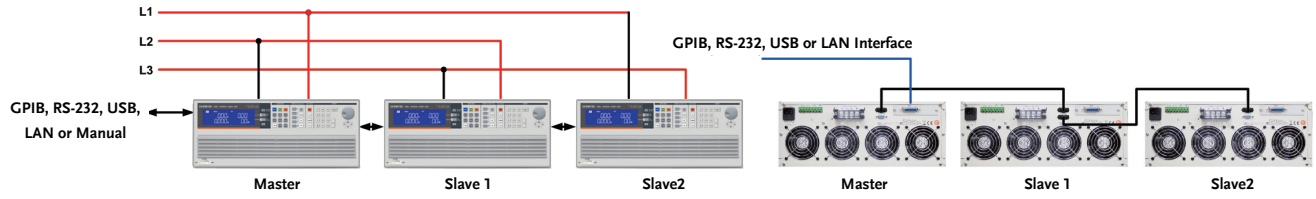
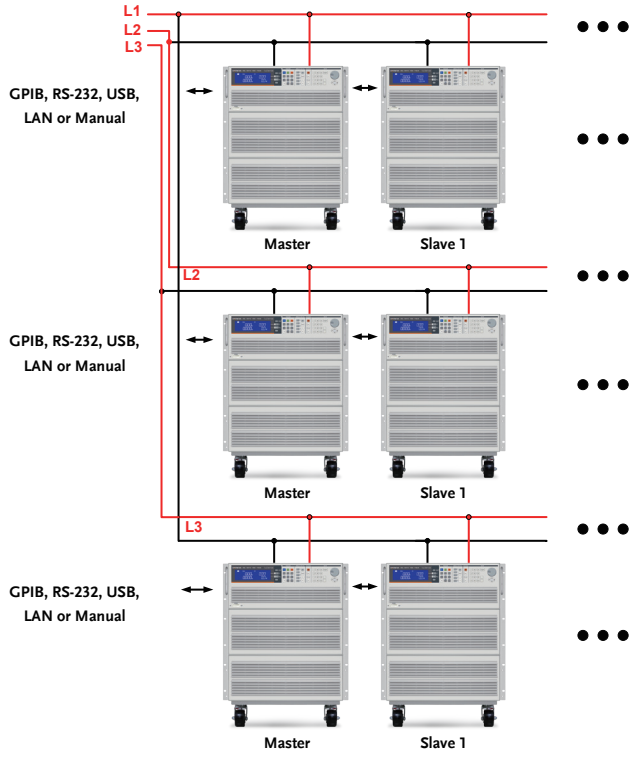
Support 1 master and up to 7 slaves operation.
Maximum up to 8 units can be connected in parallel, total power of single-phase can up to 180 kW

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



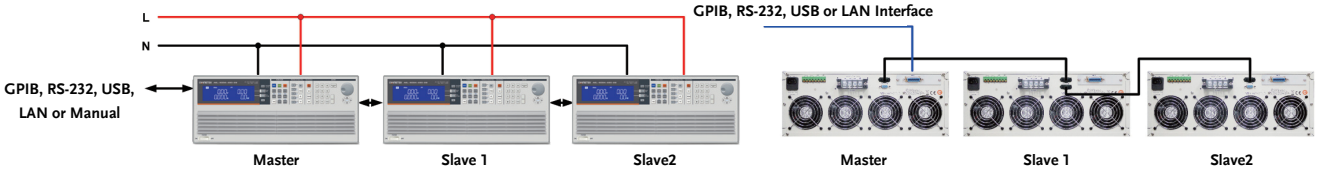


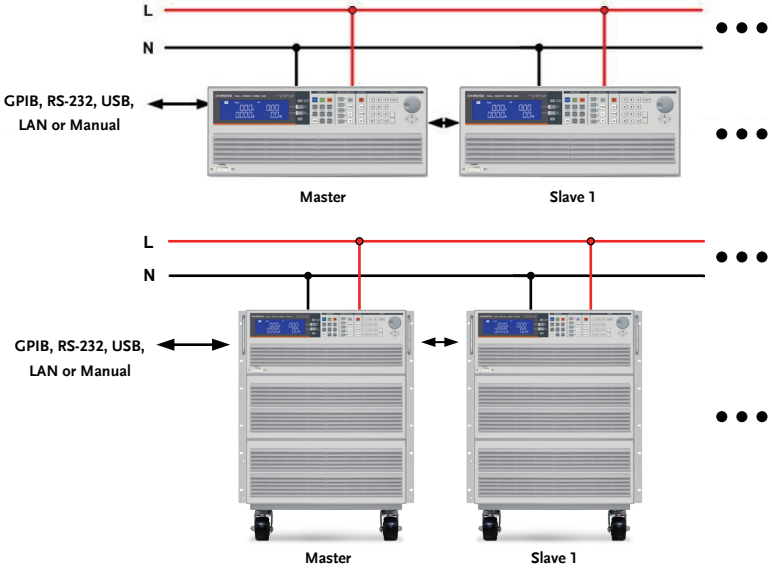
Support 1 master and up to 7 slaves operation.
Maximum up to 8 units can be connected in parallel,
total power of single-phase can up to 180 kW

Support 1 master and up to 7 slaves operation.
Maximum up to 8 units can be connected in parallel,
total power of single-phase can up to 180 kW

Support 1 master and up to 7 slaves operation.
Maximum up to 8 units can be connected in parallel,
total power of single-phase can up to 180 kW

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





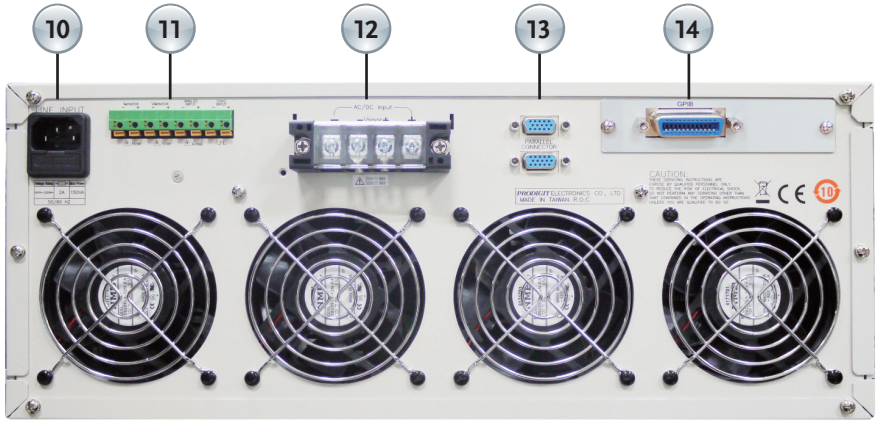
Support 1 master and up to 7 slaves operation.
Maximum up to 8 units can be connected in parallel,
total power of single-phase can up to 30 kW

Support 1 master and up to 7 slaves operation.
Maximum up to 8 units can be connected in parallel,
total power of single-phase can up to 180 kW

Parallel connection

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
		4	**Waveform library keys** Can be quickly set CF √2 / 2 / 2.5 / 3 / 3.5 ，+/- PF0.6 / 0.7 / 0.8 / 0.9 / 1.0 ， FREQ Auto / 50Hz/ 60Hz / 400Hz 。
		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

MODEL		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
Power (W)		1875 W	2800W	3750 W	1875 W	2800W	3750 W
Current(Ampere)		18.75 Arms / 56.25Apeak	28 Arms / 84Apeak	37.5 Arms / 112.5Apeak	18.75 Arms / 56.25Apeak	28 Arms / 84Apeak	37.5 Arms / 112.5Apeak
Voltage(Volt)		50~350Vrms / 500Vdc			50~425Vrms / 600Vdc		
FREQUENCY Range		DC,40~440Hz(CC,CP Mode) , DC~440Hz(LIN,CR,CV Mode)			DC,40~440Hz(CC,CP Mode) , DC~440Hz(LIN,CR,CV Mode)		
PROTECTIONS							
Over Power Protection		≒1968.75Wrms or Programmable	≒2940Wrms or Programmable	≒3937.5Wrms or Programmable	≒1968.75Wrms or Programmable	≒2940Wrms or Programmable	≒3937.5Wrms or Programmable
Over Current Protection		≒ 19.687 Arms or Programmable	≒ 29.4 Arms or Programmable	≒ 39.375 Arms, or Programmable	≒ 19.687 Arms or Programmable	≒ 29.4 Arms or Programmable	≒ 39.375 Arms, or Programmable
Over Vlotage Protection		≒ 367.5 Vrms / 525Vdc			≒ 446.25 Vrms/630Vdc		
Over Temp. Protection		Yes			Yes		
OPERATION MODE							
Constant Current Mode for Sine-Wave							
Range		0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
Resolution		0.3125mA/16bits	0.5mA/16bits	0.625mA/16bits	0.3125mA/16bits	0.5mA/16bits	0.625mA/16bits
Accuracy		± (0.1% of setting + 0.2% of range) @ 50/60Hz , ± 0.5% of (setting + range) @ DC and 400Hz			± (0.1% of setting + 0.2% of range) @ 50/60Hz , ± 0.5% of (setting + range) @ DC and 400Hz		
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave							
Range		0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
Resolution		0.3125mA/16bits	0.5mA/16bits	0.625mA/16bits	0.3125mA/16bits	0.5mA/16bits	0.625mA/16bits
Accuracy		± (0.1% of setting + 0.2% of range) @ 50/60Hz , ± 0.5% of (setting + range) @ DC and 400Hz			± (0.1% of setting + 0.2% of range) @ 50/60Hz , ± 0.5% of (setting + range) @ DC and 400Hz		
Constant Resistance Mode							
Range		3.2 ohm ~ 64k ohm	2.0 ohm ~ 40k ohm	1.6 ohm ~ 32k ohm	3.2 ohm ~ 64k ohm	2.0 ohm ~ 40k ohm	1.6 ohm ~ 32k ohm
Resolution*1		0.0052083mS/16bits	0.0083333mS/16bits	0.010416mS/16bits	0.0052083mS/16bits	0.0083333mS/16bits	0.010416mS/16bits
Accuracy		±0.2% of (setting + range) @ 50/60Hz , ± (0.5% of setting + 2% of range) @ DC and 400Hz			±0.2% of (setting + range) @ 50/60Hz , ± (0.5% of setting + 2% of range) @ DC and 400Hz		
Constant Voltage Mode							
Range		50~350Vrms / 500Vdc			50~425Vrms / 600Vdc		
Resolution		0.01V			0.1V		
Accuracy		±(0.1% of setting + 0.1% of range)			±(0.1% of setting + 0.1% of range)		
Constant Power Mode							
Range		1875W	2800W	3750W	1875W	2800W	3750W
Resolution		0.1W	0.1W	0.1W	0.1W	0.1W	0.1W
Accuracy*4		±0.5% of (setting + range) @ 50/60Hz , ±2% of (setting + range)			±0.5% of (setting + range) @ 50/60Hz , ±2% of (setting + range)		
CREST FACTOR (CC & CP MODE ONLY)							
Range		√2~5			√2~5		
Resolution		0.1			0.1		
Accuracy		(0.5% / Irms) + 1%F.S.			(0.5% / Irms) + 1%F.S.		
POWER FACTOR (CC & CP MODE ONLY)							
Range		0~1 Lag or Lead			0~1 Lag or Lead		
Resolution		0.01			0.01		
Accuracy		1%F.S.			1%F.S.		
TEST MODE							
UPS Efficient Measurement		Non-Linear Mode			Non-Linear Mode		
Operating Frequency		Auto ; 40~440Hz			Auto ; 40~440Hz		
Current Range		0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
PF Range		0~1			0~1		
Measuring Efficiency For PV Systems, Power Conditioners for THD 80%		Resistive + Non-Linear Mode			Resistive + Non-Linear Mode		
Operating Frequency		Auto ; 40~440Hz			Auto ; 40~440Hz		
Current Range		0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
Resistive Range		3.2 ohm ~ 64k ohm	2.0 ohm ~ 40k ohm	1.6 ohm ~ 32k ohm	3.2 ohm ~ 64k ohm	2.0 ohm ~ 40k ohm	1.6 ohm ~ 32k ohm
UPS Back-Up Function(CC,LIN,CR,CP)							
UVP (VTH)		50~350Vrms / 500Vdc			50~425Vrms / 600Vdc		
UPS Back-Up Time		1~99999 Sec. (>27H)			1~99999 Sec. (>27H)		
Battery Discharge Function(CC,LIN,CR,CP)							
UVP (VTH)		50~350Vrms / 500Vdc			50~425Vrms / 600Vdc		
Battery Discharge Time		1~99999 Sec. (>27H)			1~99999 Sec. (>27H)		
UPS Transfer Time							
Current Range		0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
UVP (VTH)		2.5V			2.5V		
Time Range							
Fuse Test Mode							
Max. Current	Turbo OFF(CC1~3) / Turbo ON(CC3)	18.75Arms	28.0Arms	37.5Arms	18.75Arms	28.0Arms	37.5Arms
	Turbo ON(CC1~2)	37.5Arms (x2) *3	56.0Arms (x2) *3	75.0Arms (x2) *3	37.5Arms (x2) *3	56.0Arms (x2) *3	75.0Arms (x2) *3
Trip & Non-Trip Time	Turbo OFF(Time1~3)	0.01~333.33 Sec.			0.01~333.33 Sec.		
	Turbo ON(Time1~2)	0.01~0.5 Sec.			0.01~0.5 Sec.		
	Turbo ON(Time3)	0.01~600.00 Sec.			0.01~600.00 Sec.		
OFF Time		0.1~999.9 Sec.			0.1~999.9 Sec.		
Meas. Accuracy		±0.003 Sec.			±0.003 Sec.		
Repeat Cycle		0~99999			0~99999		
Short/OPP/OCP Test Function							
Short Time	Turbo OFF	0.1~10Sec. or Cont.			0.1~10Sec. or Cont.		
	Turbo ON	0.1~1Sec.			0.1~1Sec.		
OPP/OCP Step Time	Turbo OFF	100ms			100ms		
	Turbo ON	100ms, up to 10 Steps			100ms, up to 10 Steps		
OCP Istop	Turbo OFF	18.75Arms	28.0Arms	37.5Arms	18.75Arms	28.0Arms	37.5Arms
	Turbo ON	37.5Arms	56.0Arms	75.0Arms	37.5Arms	56.0Arms	75.0Arms
OPP Pstop	Turbo OFF	1875W	2800W	3750W	1875W	2800W	3750W
	Turbo ON	3750W	5600W	7500W	3750W	5600W	7500W
Programmable Inrush Current Simulation: Istart - Istop / Tsep							
Istart, Inrush Start Current		0~37.5A	0~56A	0~75A	0~37.5A	0~56A	0~75A
Inrush Step Time		0.1ms~100ms			0.1ms~100ms		
Istop, Inrush Stop Current		0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
Programmable Surge Current Simulation: S1/T1 - S2/T2 - S3/T3							
S1 and S2 Current		0~37.5A	0~56A	0~75A	0~37.5A	0~56A	0~75A
T1 and T2 Time		0.01~0.5Sec.			0.01~0.5Sec.		
S3 Current		0~18.75A	0~28A	0~37.5A	0~18.75A	0~28A	0~37.5A
T3 Time		0.01~9.99Sec. or Cont.			0.01~9.99Sec. or Cont.		
MEASUREMENTS							
VOLTAGE READBACK V METER							
Range		500V			600V		
Resolution		0.01V			0.01V		
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		9.375Arms/18.75Arms	14Arms/28Arms	18.75Arms/37.5Arms	9.375Arms/18.75Arms	14Arms/28Arms	18.75Arms/37.5Arms
Resolution		0.2mA/0.4mA	0.3mA/0.6mA	0.4mA/0.8mA	0.2mA/0.4mA	0.3mA/0.6mA	0.4mA/0.8mA
Accuracy		±0.05% of (reading + range) @ 50/60Hz			±0.05% of (reading + range) @ 50/60Hz		
Parameter		Irms,I Max/Min,+/-Ipk			Irms,I Max/Min,+/-Ipk		
WATT READBACK W METER							
Range		1875W	2800W	3750W	1875W	2800W	3750W
Resolution		0.03125W	0.05W	0.0625W	0.03125W	0.05W	0.0625W
Accuracy*4		±0.5% of (reading + range) @ 50/60Hz , ±2% of (reading + range)			±0.5% of (reading + range) @ 50/60Hz , ±2% of (reading + range)		
VA METER		VrmsxArms Correspond To Vrms and Arms			VrmsxArms Correspond To Vrms and Arms		
POWER FACTOR METER							
Range		+/- 0.000~1.000			+/- 0.000~1.000		
Accuracy		±(0.002±(0.001/PF)*F)			±(0.002±(0.001/PF)*F)		
Frequency METER(V)							
Range		DC,40~440Hz			DC,40~440Hz		
Accuracy		0.1%			0.1%		
Other Parameter METER							
VA, VAR, CF_I, Ipeak, Imax., Imin. Vmax., Vmin., IHD, VHD, ITHD, VTHD							
OTHERS							
Start up Loading		Yes , Power on loading during Inverter / UPS start up			Yes , Power on loading during Inverter / UPS start up		
Load ON / OFF Angle		0 ~ 359 degree can be programmed for the angle of load ON and load OFF loading			0 ~ 359 degree can be programmed for the angle of load ON and load OFF loading		
Half Cycle and SCR/TRIAC Loading		Postive or Negative half cycle, 90° Trailing edge or Leading edge current waveform can be programmed			Postive 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)		F.S / 10Vdc, Resulotion 0.1V			F.S / 10Vdc, Resulotion 0.1V		
External SYNC Input		TTL			TTL		
Vmonitor (Isolated)		±500V / ±10V			±600V / ±10V		
Imonitor (Isolated)		±56.25Apk / ±10Vpk	±84Apk / ±10Vpk	±112.5Apk / ±10Vpk	±56.25Apk / ±10Vpk	±84Apk / ±10Vpk	±112.5Apk / ±10Vpk
Interface (OPTION)		GPIB ; RS-232 ; LAN ; USB			GPIB ; RS-232 ; LAN ; USB		
MAX. Power Consumption		150VA			150VA		
Operation Temperature *2					0 ~ 40 ℃		
Current of Input Impedance(mA)@50/60Hz ; @ 400Hz		–V*0.3 ; –V*2.2	–V*0.45 ; –V*3.3	–V*0.6 ; –V*4.4	–V*0.3 ; –V*2.2	–V*0.45 ; –V*3.3	–V*0.6 ; –V*4.4
Dimension(H x W x D)		177 x 440 x 552.6 mm	177 x 440 x 552.6 mm	177 x 440 x 552.6 mm	177 x 440 x 552.6 mm	177 x 440 x 552.6 mm	177 x 440 x 552.6 mm
Weight		21.5kg	27.5kg	33.5kg	21.5kg	27.5kg	33.5kg

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

*2 Operating temperature range is 0~40℃, all specification apply for 25℃±5℃, 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 20Arms

* All specifications apply for 50/60Hz

* All specifications subject to change without notice

AC & DC Electronic Load

SPECIFICATIONS

MODEL	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	11250W	15000 W	18750W	22500W
Current(Ampere)	56 Arms / 168Apeak	75 Arms / 225Apeak	112.5 Arms / 337.5Apeak	112.5 Arms / 337.5Apeak	112.5 Arms / 337.5Apeak	112.5 Arms / 337.5Apeak
Voltage(Volt)	50–350Vrms / 500Vdc					
FREQUENCY Range	DC,40–440Hz(CC,CP Mode) , DC–440Hz(LIN,CR,CV Mode)					
PROTECTIONS						
Over Power Protection	≒ 5880Wrms or Programmable	≒ 7875Wrms or Programmable	≒11812.5Wrms or Programmable	≒11812.5Wrms or Programmable	≒19687.5Wrms or Programmable	≒23625Wrms 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	≒ 367.5 Vrms/525Vdc					
Over Temp. Protection	Yes					
OPERATION MODE						
Constant Current Mode for Sine-Wave						
Range	0–56A	0–75A	0–112.5A	0–112.5A	0–112.5A	0–112.5A
Resolution	1mA/16bits	1.25mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits
Accuracy	± (0.1% of setting + 0.2% of range) @ 50/60Hz , ± 0.5% of (setting + range) @ DC and 400Hz					
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave						
Range	0–56A	0–75A	0–112.5A	0–112.5A	0–112.5A	0–112.5A
Resolution	1mA/16bits	1.25mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits
Accuracy	± (0.1% of setting + 0.2% of range) @ 50/60Hz , ± 0.5% of (setting + range) @ DC and 400Hz					
Constant Resistance Mode						
Range	1 ohm ~ 20k ohm	0.8 ohm ~ 16k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666 k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm
Resolution*1	0.016666mS/16bits	0.020832mS/16bits	0.031248mS/16bits	0.031248mS/16bits	0.031248mS/16bits	0.031248mS/16bits
Accuracy	±0.2% of （setting + range） @ 50/60Hz , ± (0.5% of setting + 2% of range) @ DC and 400Hz					
Constant Voltage Mode						
Range	50–350Vrms / 500Vdc					
Resolution	0.1V					
Accuracy	±0.2% of (setting + range) @ 50/60Hz					
Constant Power Mode						
Range	5600W	7500W	11250W	15000 W	18750W	22500W
Resolution	0.1W	0.1W	1W	1W	1W	1W
Accuracy*4	±0.5% of (setting + range) @ 50/60Hz , ±2% of (setting + range)					
CREST FACTOR (CC & CP MODE ONLY)						
Range	√2–5					
Resolution	0.1					
Accuracy	(0.5% / Irms) + 1%F.S.					
POWER FACTOR (CC & CP MODE ONLY)						
Range	0~1 Lag or Lead					
Resolution	0.01					
Accuracy	1%F.S.					
TEST MODE						
UPS Efficient Measurement	Non-Linear Mode					
Operating Frequency	Auto ; 40–440Hz					
Current Range	0–56A	0–75A	0–112.5A	0–112.5A	0–112.5A	0–112.5A
PF Range	0–1					
Measuring Efficiency For PV Systems, Power Conditioners for THD 80%	Resistive + Non-Linear Mode					
Operating Frequency	Auto ; 40–440Hz					
Current Range	0–56A	0–75A	0–112.5A	0–112.5A	0–112.5A	0–112.5A
Resistive Range	1 ohm ~ 20k ohm	0.8 ohm ~ 16k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm
UPS Back-Up Function(CC,LIN,CR,CP)						
UVP (VTH)	50–350Vrms / 500Vdc					
UPS Back-Up Time	1~99999 Sec. (>27H)					
Battery Discharge Function(CC,LIN,CR,CP)						
UVP (VTH)	50–350Vrms / 500Vdc					
Battery Discharge Time	1~99999 Sec. (>27H)					
UPS Transfer Time						
Current Range	0–56A	0–75A	0–112.5A	0–112.5A	0–112.5A	0–112.5A
UVP (VTH)	2.5V					
Time range	0.15ms–999.99ms					
Fuse Test Mode						
Max. Current — Turbo OFF(CC1–3)	56Arms	75Arms	112.5Arms	112.5Arms	112.5Arms	112.5Arms
Max. Current — Turbo ON(CC3)						
Max. Current — Turbo ON(CC1–2)	112Arms (x2) *3	150Arms (x2) *3	225Arms (x2) *3	225Arms (x2) *3	225Arms (x2) *3	225Arms (x2) *3
Trip & Non-Trip Time — Turbo OFF(Time1–3)	0.01–333.33 Sec.					
Trip & Non-Trip Time — Turbo ON(Time1–2)	0.01–0.50 Sec.					
Trip & Non-Trip Time — Turbo ON(Time3)	0.01–600.00 Sec.					
OFF Time	0.1–999.9 Sec.					
Meas. Accuracy	±0.003 Sec.					
Repeat Cycle	0–99999					
Short/OPP/OCP Test Function						
Short Time — Turbo OFF	0.1–10Sec. or Cont.					
Short Time — Turbo ON	0.1–1Sec.					
OPP/OCP Step Time — Turbo OFF	100ms					
OPP/OCP Step Time — Turbo ON	100ms, up to 10 Steps					
OCP Istop — Turbo OFF	56Arms	75Arms	112.5Arms	112.5Arms	112.5Arms	112.5Arms
OCP Istop — Turbo ON	112Arms	150Arms	225Arms	225Arms	225Arms	225Arms
OPP Pstop — Turbo OFF	5600W	7500W	11250W	15000W	18750W	22500W
OPP Pstop — Turbo ON	11200W	15000W	22500W	30000W	37500W	45000W
Programmable Inrush Current Simulation: Istart - Istop / Tsep						
Istart, Inrush Start Current	0–112A	0–150A	0–225A	0–225A	0–225A	0–225A
Inrush Step Time	0.1ms–100ms					
Istop, Inrush Stop Current	0–56A	0–75A	0–112.5A	0–112.5A	0–112.5A	0–112.5A
Programmable Surge Current Simulation: S1/T1 - S2/T2 - S3/T3						
S1 and S2 Current	0–112A	0–150A	0–225A	0–225A	0–225A	0–225A
T1 and T2 Time	0.01–0.5Sec.					
S3 Current	0–56A	0–75A	0–112.5A	0–112.5A	0–112.5A	0–112.5A
T3 Time	0.01–9.99Sec. or Cont.					
MEASUREMENTS						
VOLTAGE READBACK A METER						
Range	500V					
Resolution	0.01V					
Accuracy	±0.05% of (reading + range)					
Parameter	Vrms,V Max/Min,+/-Vpk					
CURRENT READBACK A METER						
Range	28Arms/56Arms	37.5Arms/75Arms	56.25Arms/112.5Arms	56.25Arms/112.5Arms	56.25Arms/112.5Arms	56.25Arms/112.5Arms
Resolution	0.6mA/1.2mA	0.8mA/1.6mA	1.2mA/2.4mA	1.2mA/2.4mA	1.2mA/2.4mA	1.2mA/2.4mA
Accuracy	±0.1% of (reading + range) @ 50/60Hz					
Parameter	Irms,I Max/Min,+/-Ipk					
WATT READBACK W METER						
Range	5600W	7500W	11250W	15000W	18750W	22500W
Resolution	0.1W	0.125W	0.1875W	0.25W	0.3125W	0.375W
Accuracy*4	±0.5% of (reading + range) @ 50/60Hz , ±2% of (reading + range)					
VA METER	Vrms×Arms Correspond To Vrms and Arms					
Power Factor METER						
Range	+/- 0.000~1.000					
Accuracy	±(0.002±(0.001/PF)*F)					
Frequency METER(V)						
Range	DC,40–440Hz					
Accuracy	0.1%					
Other Parameter METER	VA, VAR, CF_I, Ipeak, Imax., Imin. Vmax., Vmin., IHD, VHD, ITHD, VTHD					
OTHERS						
Start up Loading	Yes , Power on loading during Inverter / UPS start up					
Load ON / OFF Angle	0 ~ 359 degree can be programmed for the angle of load ON and load OFF loading					
Half Cycle and SCR/TRIAC Loading	Postive 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 unit					
External Programming Input (OPTION)	F.S / 10Vdc, Resulotion 0.1V					
External SYNC Input	TTL					
Vmonitor (Isolated)	±500V / ±10V					
Imonitor (Isolated)	±168Apk / ±10Vpk	±225Apk / ±10Vpk	±337.5Apk / ±10Vpk	±337.5Apk / ±10Vpk	±337.5Apk / ±10Vpk	±337.5Apk / ±10Vpk
Interface (OPTION)	GPIB ; RS-232 ; LAN ; USB					
MAX. Power Consumption	270VA	270VA	390VA	510VA	630VA	750VA
Operation Temperature *2	0 ~ 40 ℃					
Current of Input Impedance(mA)@50/60Hz ; @ 400Hz	–V*0.9 ; –V*6.6	–V*1.2 ; –V*8.8	–V*1.8 ; –V*13.2	–V*2.4 ; –V*17.6	–V*3.0 ; –V*22	–V*3.6 ; –V*26.4
Dimension(H x W x D)	457.8 x 480 x 593 mm	457.8 x 480 x 593 mm	635.7 x 480 x 593 mm	813.5 x 480 x 593 mm	1283 x 600 x 600 mm	1283 x 600 x 600 mm
Weight	58 kg	70 kg	105kg	140kg	260kg	295kg

***1 ms (millisiemens) is the unit of conductance(G), one siemens equal to 1/Ω**
***2 Operating temperature range is 0~40℃, all specification apply for 25℃±5℃, 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 20Arms**

*** All specifications apply for 50/60Hz**
*** All specifications subject to change without notice**

AC & DC Electronic Load

SPECIFICATIONS

MODEL		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
Power (W)		5600 W	7500 W	11250W	15000 W	18750W	22500W
Current(Ampere)		56 Arms / 168Apeak	75 Arms / 225Apeak	112.5 Arms / 337.5Apeak	112.5 Arms / 337.5Apeak	112.5 Arms / 337.5Apeak	112.5 Arms / 337.5Apeak
Voltage(Volt)		50~425Vrms / 600Vdc					
FREQUENCY Range		DC,40~440Hz(CC,CP Mode) , DC~440Hz(LIN,CR,CV Mode)					
PROTECTIONS							
Over Power Protection		≒ 5880Wrms or Programmable	≒ 7875Wrms or Programmable	≒11812.5Wrms or Programmable	≒15750Wrms or Programmable	≒19687.5Wrms or Programmable	≒23625Wrms 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/630Vdc					
Over Temp. Protection		Yes					
OPERATION MODE							
Constant Current Mode for Sine-Wave							
Range		0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A
Resolution		1mA/16bits	1.25mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits
Accuracy		± (0.1% of setting + 0.2% of range) @ 50/60Hz , ± 0.5% of (setting + range) @ DC and 400Hz					
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave							
Range		0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A
Resolution		1mA/16bits	1.25mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits	1.875mA/16bits
Accuracy		± (0.1% of setting + 0.2% of range) @ 50/60Hz , ± 0.5% of (setting + range) @ DC and 400Hz					
Constant Resistance Mode							
Range		1 ohm ~ 20k ohm	0.8 ohm ~ 16k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm
Resolution*1		0.016666mS/16bits	0.020832mS/16bits	0.031248mS/16bits	0.031248mS/16bits	0.031248mS/16bits	0.031248mS/16bits
Accuracy		±0.2% of （setting + range）@ 50/60Hz , ± (0.5% of setting + 2% of range) @ DC and 400Hz					
Constant Voltage Mode							
Range		50~425Vrms / 600Vdc					
Resolution		0.1V					
Accuracy		±0.2% of (setting + range) @ 50/60Hz					
Constant Power Mode							
Range		5600W	7500W	11250W	15000 W	18750W	22500W
Resolution		0.1W	0.1W	1W	1W	1W	1W
Accuracy *4		±0.5% of (setting + range) @ 50/60Hz , ±2% of (setting + range)					
CREST FACTOR (CC & CP MODE ONLY)							
Range		√2~5					
Resolution		0.1					
Accuracy		(0.5% / Irms) + 1%F.S.					
POWER FACTOR (CC & CP MODE ONLY)							
Range		0~1 Lag or Lead					
Resolution		0.01					
Accuracy		1%F.S.					
TEST MODE							
UPS Efficient Measurement		Non-Linear Mode					
Operating Frequency		Auto ; 40~440Hz					
Current Range		0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A
PF Range		0~1					
Measuring Efficiency For PV Systems, Power Conditioners for THD 80%		Resistive + Non-Linear Mode					
Operating Frequency		Auto ; 40~440Hz					
Current Range		0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A
Resistive Range		1 ohm ~ 20k ohm	0.8 ohm ~ 16k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm	0.533 ohm ~ 10.666k ohm
UPS Back-Up Function(CC,LIN,CR,CP)							
UVP (VTH)		50~425Vrms / 600Vdc					
UPS Back-Up Time		1~99999 Sec. (>27H)					
Battery Discharge Function(CC,LIN,CR,CP)							
UVP (VTH)		50~425Vrms / 600Vdc					
Battery Discharge Time		1~99999 Sec. (>27H)					
UPS Transfer Time							
Current Range		0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A
UVP (VTH)		2.5V					
Time range		0.15ms~999.99ms					
Fuse Test Mode							
Max. Current	Turbo OFF(CC1~3)	56Arms	75Arms	112.5Arms	112.5Arms	112.5Arms	112.5Arms
	Turbo ON(CC3)						
	Turbo ON(CC1~2)	112Arms (x2) *3	150Arms (x2) *3	225Arms (x2) *3	225Arms (x2) *3	225Arms (x2) *3	225Arms (x2) *3
Trip & Non-Trip Time	Turbo OFF(Time1~3)	0.01~333.33 Sec.					
	Turbo ON(Time1~2)	0.01~0.50 Sec.					
	Turbo ON(Time3)	0.01~600.00 Sec.					
OFF Time		0.1~999.9 Sec.					
Meas. Accuracy		±0.003 Sec.					
Repeat Cycle		0~99999					
Short/OPP/OCP Test Function							
Short Time	Turbo OFF	0.1~10Sec. or Cont.					
	Turbo ON	0.1~1Sec.					
OPP/OCP Step Time	Turbo OFF	100ms					
	Turbo ON	100ms, up to 10 Steps					
OCP Istop	Turbo OFF	56Arms	75Arms	112.5Arms	112.5Arms	112.5Arms	112.5Arms
	Turbo ON	112Arms	150Arms	225Arms	225Arms	225Arms	225Arms
OPP Pstop	Turbo OFF	5600W	7500W	11250W	15000W	18750W	22500W
	Turbo ON	11200W	15000W	22500W	30000W	37500W	45000W
Programmable Inrush Current Simulation: Istart - Istop / Tsep							
Istart, Inrush Start Current		0~112A	0~150A	0~225A	0~225A	0~225A	0~225A
Inrush Step Time		0.1ms~100ms					
Istop, Inrush Stop Current		0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A
Programmable Surge Current Simulation: S1/T1 - S2/T2 - S3/T3							
S1 and S2 Current		0~112A	0~150A	0~225A	0~225A	0~225A	0~225A
T1 and T2 Time		0.01~0.5Sec.					
S3 Current		0~56A	0~75A	0~112.5A	0~112.5A	0~112.5A	0~112.5A
T3 Time		0.01~9.99Sec. or Cont.					
MEASUREMENTS							
VOLTAGE READBACK A METER							
Range		600V					
Resolution		0.01V					
Accuracy		±0.05% of (reading + range)					
Parameter		Vrms,V Max/Min,+/-Vpk					
CURRENT READBACK A METER							
Range		28Arms/56Arms	37.5Arms/75Arms	56.25Arms/112.5Arms	56.25Arms/112.5Arms	56.25Arms/112.5Arms	56.25Arms/112.5Arms
Resolution		0.6mA/1.2mA	0.8mA/1.6mA	1.2mA/2.4mA	1.2mA/2.4mA	1.2mA/2.4mA	1.2mA/2.4mA
Accuracy		±0.1% of (reading + range) @ 50/60Hz					
Parameter		Irms,I Max/Min,+/-Ipk					
WATT READBACK W METER							
Range		5600W	7500W	11250W	15000W	18750W	22500W
Resolution		0.1W	0.125W	0.1875W	0.25W	0.3125W	0.375W
Accuracy *4		±0.5% of (reading + range) @ 50/60Hz , ±3% of (reading + range)					
VA METER		Vrms×Arms Correspond To Vrms and Arms					
Power Factor METER							
Range		+/- 0.000~1.000					
Accuracy		±(0.002±(0.001/PF)*F)					
Frequency METER(V)							
Range		DC,40~440Hz					
Accuracy		0.1%					
Other Parameter METER							
		VA, VAR, CF_I, Ipeak, Imax., Imin. Vmax., Vmin., IHD, VHD, ITHD, VTHD					
OTHERS							
Start up Loading		Yes , Power on loading during Inverter / UPS start up					
Load ON / OFF Angle		0 ~ 359 degree can be programmed for the angle of load ON and load OFF loading					
Half Cycle and SCR/TRIAC Loading		Postive 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 unit					
External Programming Input (OPTION)		F.S / 10Vdc, Resulotion 0.1V					
External SYNC Input		TTL					
Vmonitor (Isolated)		±600V / ±10V					
Imonitor (Isolated)		±168Apk / ±10Vpk	±225Apk / ±10Vpk	±337.5Apk / ±10Vpk	±337.5Apk / ±10Vpk	±337.5Apk / ±10Vpk	±337.5Apk / ±10Vpk
Interface (OPTION)		GPIB ; RS-232 ; LAN ; USB					
MAX. Power Consumption		270VA	270VA	390VA	510VA	630VA	750VA
Operation Temperature *2		0 ~ 40 ℃					
Current of Input Impedance(mA)@50/60Hz ; @ 400Hz		~V*0.9 ; ~V*6.6	~V*1.2 ; ~V*8.8	~V*1.8 ; ~V*13.2	~V*2.4 ; ~V*17.6	~V*3.0 ; ~V*22	~V*3.6 ; ~V*26.4
Dimension(H x W x D)		457.8 x 480 x 593 mm	457.8 x 480 x 593 mm	635.7 x 480 x 593 mm	813.5 x 480 x 593 mm	1283 x 600 x 600 mm	1283 x 600 x 600 mm
Weight		58 kg	70 kg	105kg	140kg	260kg	295kg

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

*2 Operating temperature range is 0~40℃, all specification apply for 25℃±5℃, 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 20Arms

* All specifications apply for 50/60Hz

* All specifications subject to change without notice

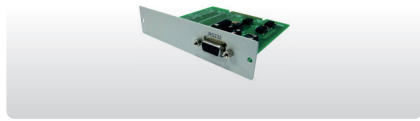
AC & DC Electronic Load

SPECIFICATIONS

MODEL		AEL-5003-480-18.75	AEL-5004-480-28
Power (W)		2800W	3750 W
Current(Ampere)		18.75 Arms / 56.25Apeak	28 Arms / 84Apeak
Voltage(Volt)		50~480Vrms / 700Vdc	
FREQUENCY Range		DC,40~70Hz(CC,CP Mode) , DC~70Hz(LIN,CR,CV Mode)	
PROTECTIONS			
Over Power Protection		≒2940Wrms or Programmable	≒ 3937.5Wrms or Programmable
Over Current Protection		≒ 19.687 Arms or Programmable	≒ 29.4 Arms or Programmable
Over Vlotage Protection		≒ 504Vrms / 735Vdc	
Over Temp. Protection		Yes	
OPERATION MODE			
Constant Current Mode for Sine-Wave			
Range		0~18.75A	0~28A
Resolution		0.3125mA/16bits	0.5mA/16bits
Accuracy		± (0.1% of setting + 0.2% of range) @ 50/60Hz , ± 0.5% of (setting + range) @ DC and 400Hz	
Linear Constant Current Mode for Sine-Wave, Square-Wave or Quasi-Square Wave, PWM Wave			
Range		0~18.75A	0~28A
Resolution		0.3125mA/16bits	0.5mA/16bits
Accuracy		± (0.1% of setting + 0.2% of range) @ 50/60Hz , ± 0.5% of (setting + range) @ DC and 400Hz	
Constant Resistance Mode			
Range		4 ohm ~ 80K ohm	2.5 ohm ~ 50K ohm
Resolution*1		0.004166mS/16bits	0.006666mS/16bits
Accuracy		±0.2% of (setting + range) @ 50/60Hz , ± (0.5% of setting + 2% of range) @ DC and 400Hz	
Constant Voltage Mode			
Range		50~480Vrms / 700Vdc	
Resolution		0.0125V	
Accuracy		±(0.1% of setting + 0.1% of range)	
Constant Power Mode			
Range		2800W	3750W
Resolution		0.1W	0.1W
Accuracy*4		±0.5% of (setting + range) @ 50/60Hz , ±2% of (setting + range)	
CREST FACTOR (CC & CP MODE ONLY)			
Range		√2~5	
Resolution		0.1	
Accuracy		(0.5% / Irms) + 1%F.S.	
POWER FACTOR (CC & CP MODE ONLY)			
Range		0~1 Lag or Lead	
Resolution		0.01	
Accuracy		1%F.S.	
TEST MODE			
UPS Efficient Measurement		Non-Linear Mode	
Operating Frequency		Auto ; 40~70Hz	
Current Range		0~18.75A	0~28A
PF Range		0~1	
Measuring Efficiency For PV Systems, Power Conditioners for THD 80%		Resistive + Non-Linear Mode	
Operating Frequency		Auto ; 40~70Hz	
Current Range		0~18.75A	0~28A
Resistive Range		4 ohm ~ 80k ohm	2.5 ohm ~ 50k ohm
UPS Back-Up Function(CC,LIN,CR,CP)			
UVP (VTH)		50~480Vrms / 700Vdc	
UPS Back-Up Time		1~99999 Sec. (>27H)	
Battery Discharge Function(CC,LIN,CR,CP)			
UVP (VTH)		50~480Vrms / 700Vdc	
Battery Discharge Time		1~99999 Sec. (>27H)	
UPS Transfer Time			
Current Range		0~18.75A	0~28A
UVP (VTH)		2.5V	
Time range		0.15ms~999.99ms	
Fuse Test Mode			
Max. Current	Turbo OFF(CC1~3)	18.75Arms	28.0Arms
	Turbo ON(CC3)		
	Turbo ON(CC1~2)	37.5Arms (x2) *3	56.0Arms (x2) *3
Trip & Non-Trip Time	Turbo OFF(Time1~3)	0.01~333.33 Sec.	
	Turbo ON(Time1~2)	0.01~0.50 Sec.	
	Turbo ON(Time3)	0.01~600.00 Sec.	
OFF Time		0.1~999.9 Sec.	
Meas. Accuracy		±0.003 Sec.	
Repeat Cycle		0~99999	
Short/OPP/OCP Test Function			
Short Time	Turbo OFF		
	Turbo ON		
OPP/OCP Step Time	Turbo OFF	100ms	
	Turbo ON	100ms, up to 10 Steps	
OCP Istop	Turbo OFF	18.75Arms	28.0Arms
	Turbo ON	37.5Arms	56.0Arms
OPP Pstop	Turbo OFF	2800W	3750W
	Turbo ON	5600W	7500W
Programmable Inrush Current Simulation: Istart - Istop / Tsep			
Istart, Inrush Start Current		0~37.5k	0~56A k
Inrush Step Time		0.1ms~100ms	
Istop, Inrush Stop Current		0~18.75A	0~28A
Programmable Surge Current Simulation: S1/T1 - S2/T2 - S3/T3			
S1 and S2 Current		0~37.5A	0~56A
T1 and T2 Time		0.01~0.5Sec.	
S3 Current		0~18.75A	0~28A
T3 Time		0.01~9.99Sec. or Cont.	
MEASUREMENTS			
VOLTAGE READBACK V METER			
Range		700V	
Resolution		0.0125V	
Accuracy		±0.05% of (reading + range)	
Parameter		Vrms,V Max/Min,+/-Vpk	
CURRENT READBACK A METER			
Range		9.375Arms/18.75Arms	14Arms/28Arms
Resolution		0.2mA/0.4mA	0.3mA/0.6mA
Accuracy		±0.05% of (reading + range) @ 50/60Hz	
Parameter		Irms,I Max/Min,+/-Ipk	
WATT READBACK W METER			
Range		2800W	3750W
Resolution		0.05W	0.0625W
Accuracy*4		±0.5% of (reading + range) @ 50/60Hz , ±2% of (reading + range)	
VA METER		Vrms×Arms Correspond To Vrms and Arms	
Power Factor METER			
Range		+/- 0.000~1.000	
Accuracy		±(0.002±(0.001/PF)*F)	
Frequency METER(V)			
Range		DC,40~70Hz	
Accuracy		0.1%	
Other Parameter METER			
VA, VAR, CF_I, Ipeak, Imax., Imin. Vmax., Vmin., IHD, VHD, ITHD, VTHD			
OTHERS			
Start up Loading		Yes , Power on loading during Inverter / UPS start up	
Load ON / OFF Angle		0 ~ 359 degree can be programmed for the angle of load ON and load OFF loading	
Half Cycle and SCR/TRIAC Loading		Postive 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	
External Programming Input (OPTION)		F.S / 10Vdc, Resulotion 0.1V	
External SYNC Input		TTL	
Vmonitor (Isolated)		±700V / ±10V	
Imonitor (Isolated)		±56.25Apk / ±10Vpk	±84Apk / ±10Vpk
Interface (OPTION)		GPIB ; RS-232 ; LAN ; USB	
MAX. Power Consumption		150VA	
Operation Temperature *2		0 ~ 40 ℃	
Current of Input Impedance(mA)@50/60Hz ; @ 400Hz		~V*0.3 ; ~V*2.2	~V*0.4 ; ~V*2.95
Dimension(H x W x D)		177 x 440 x 552.6 mm	177 x 440 x 552.6 mm
Weight		27.5kg	33.5kg

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)

***1 ms (millisiemens) is the unit of conductance(G), one siemens equal to 1/Ω**
***2 Operating temperature range is 0~40℃, all specification apply for 25℃±5℃, 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 20Arms**

*** All specifications apply for 50/60Hz**
*** All specifications subject to change without notice**

ORDERING INFORMATION

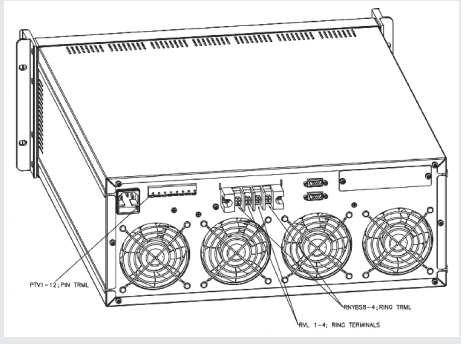
AEL-5002-350-18.75	350V/18.75A/1875W	AC & DC Electronic Load
AEL-5003-350-28	350V/28A/2800W	AC & DC Electronic Load
AEL-5004-350-37.5	350V/37.5A/3750W	AC & DC Electronic Load
AEL-5006-350-56	350V/56A/5600W	AC & DC Electronic Load
AEL-5008-350-75	350V/75A/7500W	AC & DC Electronic Load
AEL-5012-350-112.5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

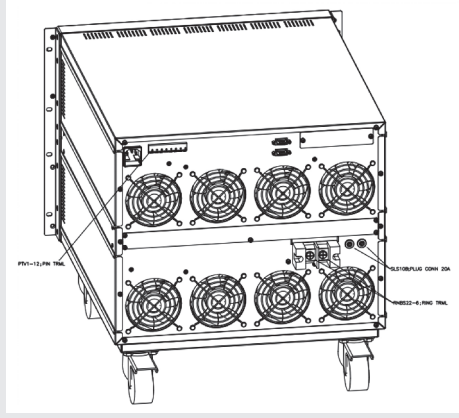
AEL-5015-425-112.5

- Power rating: 15-> 15kW
- Maximum output voltage: 425-> 425V
- Maximum output current: 112.5-> 112.5A

STANDARD ACCESSORIES

AEL-5000 Series operation manual
HD-DSUB : 15pin MALE to MALE 150cm 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

ORDERING INFORMATION

Fig. 1

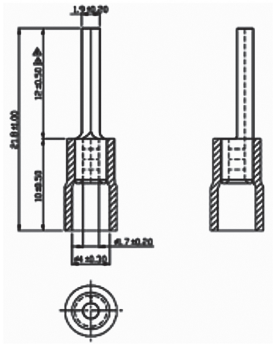


Fig. 2

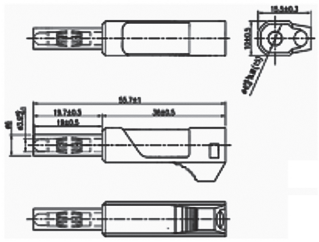


Fig. 3

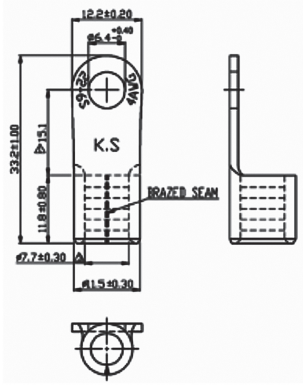


Fig. 4

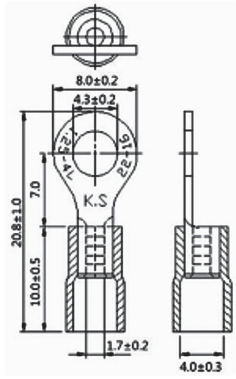
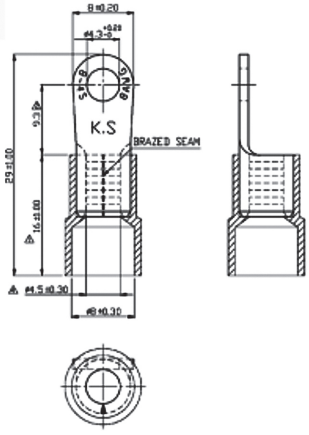


Fig. 5



OPTIONAL ACCESSORIES

PEL-022 GPIB Card
PEL-023 RS-232 Card
PEL-024 LAN Card
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

GTL-246 USB Cable, USB 2.0, A-B Type, 1200mm
GTL-248 GPIB Cable, Double Shielded, 2000mm
GTL-250 GPIB Cable, Double Shielded, 600mm

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

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