

ELPA-SINE

SINGLE PHASE AC ELECTRONIC LOAD



POSITIVE PROBLEM SOLVING **+=**

While primarily aimed at AC applications this series of electronic loads can also be used for DC testing. A comprehensive feature set is provided as standard.

When in constant current operation the user can select between sine, square and DC waveforms. Peak currents can be simulated with the crest factor mode. A power factor can be set with adjustments from unity to 0 lagging or leading. The desired wave can be recalled from the front panel or selected via an optional computer interface. A turbo mode is included as standard. This provides the ability to test currents up to double the maximum current range for up to 1 second, ideal for inrush current testing.

- + Sine, Step & Squarewave Loading Functions**
- + Adjustable Leading & Lagging Power Factor**
- + High Power Configurations to 180kW**
- + CC, CV, CP, CR & Crest Factor Mode**
- + Last Setting Memory Function**
- + DC to 440Hz Operation**

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STANDARD MODELS

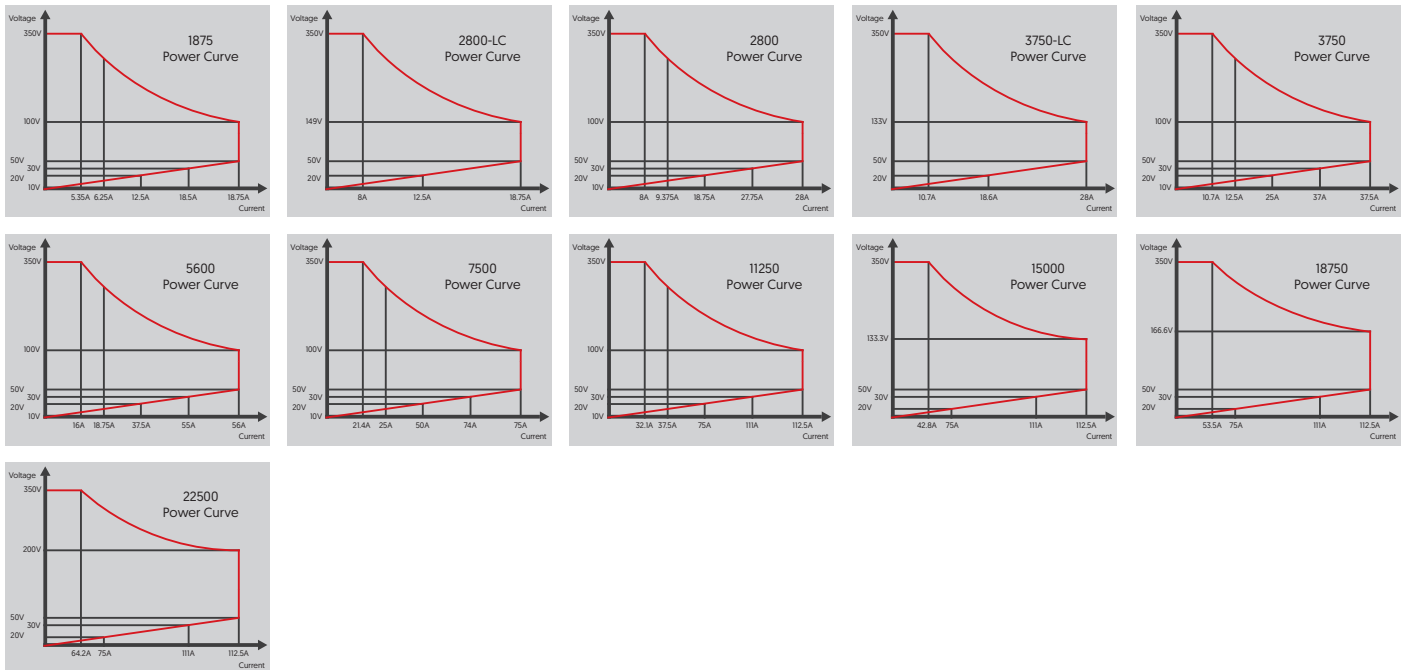


SELECTION TABLE

Part Number	Max Power	Maximum Voltage	Current Range	Dimensions Outside of Cabinet (W x H x D)	Cabinet Dimensions (W x H x D)
ELPA-SINE 1875	1875W	350Vrms / 500Vdc	0 - 18.75Arms	19" x 4U x 513mm	N/A
ELPA-SINE 2800-LC	2800W	350Vrms / 500Vdc	0 - 18.75Arms	19" x 4U x 513mm	N/A
ELPA-SINE 2800	2800W	350Vrms / 500Vdc	0 - 28Arms	19" x 4U x 513mm	N/A
ELPA-SINE 3750-LC	3750W	350Vrms / 500Vdc	0 - 28Arms	19" x 4U x 513mm	N/A
ELPA-SINE 3750	3750W	350Vrms / 500Vdc	0 - 37.5Arms	19" x 4U x 513mm	N/A
ELPA-SINE 5600	5600W	350Vrms / 500Vdc	0 - 56Arms	19" x 8U x 513mm	480mm x 458mm x 590mm*
ELPA-SINE 7500	7500W	350Vrms / 500Vdc	0 - 75Arms	19" x 8U x 513mm	480mm x 458mm x 590mm*
ELPA-SINE 11250	11250W	350Vrms / 500Vdc	0 - 112.5Arms	19" x 12U x 513mm	480mm x 636mm x 590mm*
ELPA-SINE 15000	15000W	350Vrms / 500Vdc	0 - 112.5Arms	19" x 16U x 513mm	480mm x 814mm x 590mm*
ELPA-SINE 18750	18750W	350Vrms / 500Vdc	0 - 112.5Arms	N/A	600mm x 1283mm x 600mm*
ELPA-SINE 22500	22500W	350Vrms / 500Vdc	0 - 112.5Arms	N/A	600mm x 1283mm x 600mm*

* This model comes pre-fitted into its own wheeled cabinet.

OPERATING RANGES



INTERFACE OPTIONS

OPTIONS

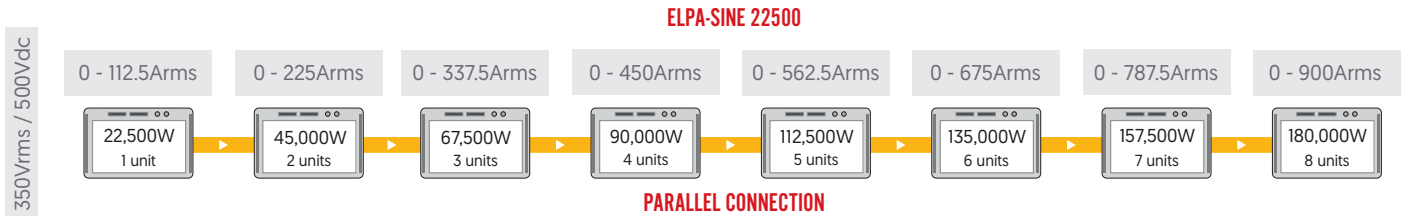
CODE	DESCRIPTION
/GPIB	GPIB interface
/RS232	RS232 interface
/USB	USB interface
/LAN	LAN interface

MASTER-SLAVE CAPABILITY

Up to 8 ELPA-SINE systems can be arranged in single phase parallel connection. Each electronic load is able to operate independently, so that systems can be reconfigured, expanded or broken up as needs dictate.

The current is actively shared between each load. The ammeter of the master unit shows the total current that is the sum of all ammeters, The voltmeters of the slaves will show SL1 and SL2.

The modular approach is useful for test houses and research labs who regularly test different sized power devices. Individual units can be used for the day to day testing of multiple small devices, then grouped together for larger projects.



CABINET OPTIONS

Units can be treated to a laboratory rack or flight case integration. Having a programmable power system mounted into a flight case on castors is often advantageous, especially when several departments or test cells share the same equipment. Multiple power systems can be fitted into the same flight case.

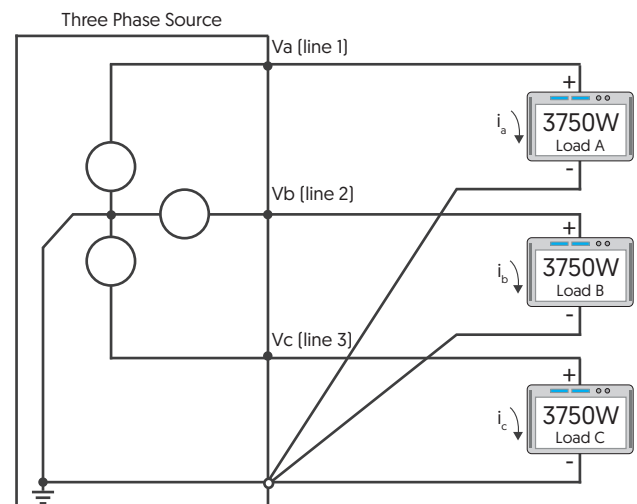
Door hangers are fitted to flight cases for convenience. Existing ETPS systems can also be retrospectively integrated into new flight cases where requested.



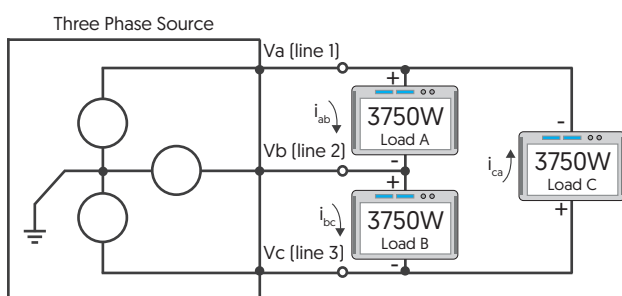
THREE PHASE MODE

ELPA-SINE units with identical nominals can be configured in Δ or Y connections for 3 phase applications. Systems can be expanded up to 180kW per phase using the master/slave interface. The setting current value (single phase current value) will be sent to each slave unit automatically, the user does not have to set each unit.

Y CONNECTION



Δ CONNECTION

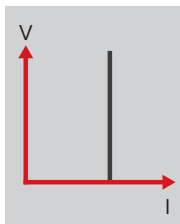


STANDARD FEATURES

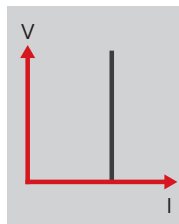
	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750
Maximum Power	1875W	2800W	2800W	3750W	3750W
Current Range	18.75Arms / 56.25Apeak	18.75Arms / 56.25Apeak	28Arms / 84Apeak	28Arms / 84Apeak	37.5Arms / 112.5Apeak
Voltage Range	50-350Vrms / 500Vdc				
Frequency Range	DC, 40-440Hz [CC, CP Mode], DC-440Hz [LIN, CR, CV Mode]				
Master/Slave Functionality	Yes, up to eight identical single phase units can be connected in parallel				
External Programming Input	F.S. / 10Vdc, Resolution 0.1V				
External SYNC Input	TTL				
Vmonitor [Isolated]	±500V / ±10V				
Imonitor [Isolated]	±56.25Apk / ±10Vpk	±56.25Apk / ±10Vpk	±84Apk / ±10Vpk	±84Apk / ±10Vpk	±112.5Apk / ±10Vpk
Interface [Option]	GPIB, RS-232, LAN, USB				
Operating Temperature	0 to 40°C [accuracy of the specifications provided are valid at 25°C ±5°C]				
Current of Input Impedence	~V*0.3; ~V*2.2	~V*0.3; ~V*2.2	~V*0.45; ~V*3.3	~V*0.4; ~V*2.95	~V*0.6; ~V*4.4
Weight	21.5kg	27.5kg	27.5kg	33.5kg	33.5kg
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 & SCR/TRIAC Loading	Positive or negative half cycle, 90° trailing edge or leading edge current waveform can be programmed				

	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
Maximum Power	5600W	7500W	11250W	15000W	18750W	22500W
Current Range	56 Arms / 168Apeak	75 Arms / 225Apeak	112.5 Arms / 337.5Apeak	112.5Arms / 337.5Apeak	112.5 Arms / 337.5Apeak	112.5 Arms / 337.5Apeak
Voltage Range	50-350Vrms / 500Vdc					
Frequency Range	DC, 40-440Hz [CC, CP Mode], DC-440Hz [LIN, CR, CV Mode]					
Master/Slave Functionality	Yes, up to eight identical single phase units can be connected in parallel					
External Programming Input [Option]	F.S. / 10Vdc, Resolution 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					
Operating Temperature	0 to 40°C [accuracy of the specifications provided are valid at 25°C ±5°C]					
Current of Input Impedence	~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
Weight	58kg	70kg	105kg	140kg	260kg	295kg
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 & SCR/TRIAC Loading	Positive or negative half cycle, 90° trailing edge or leading edge current waveform can be programmed					

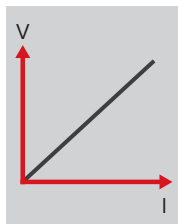
OPERATING MODES



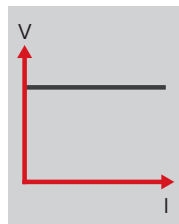
Constant Current Mode



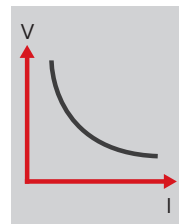
Linear Constant Current Mode



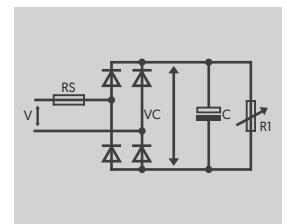
Constant Resistance Mode



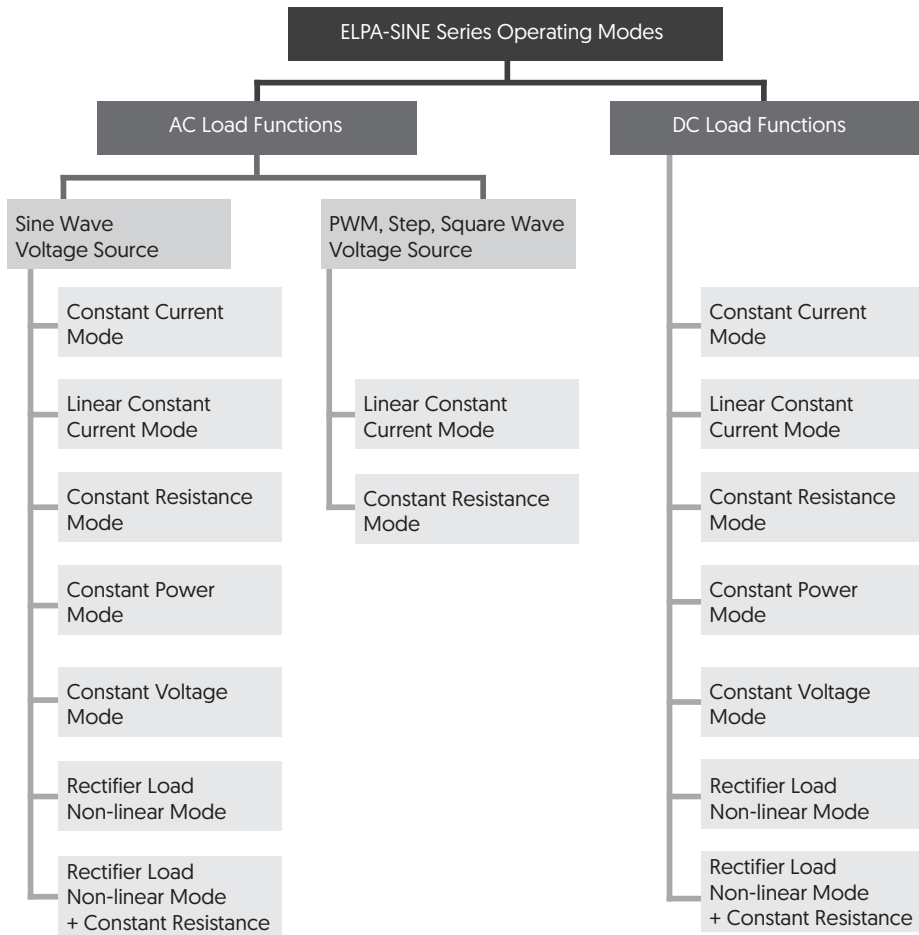
Constant Voltage Mode



Constant Power Mode



Rectifier Load Mode

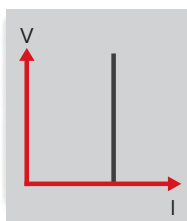


CONSTANT CURRENT MODE FOR SINE-WAVE

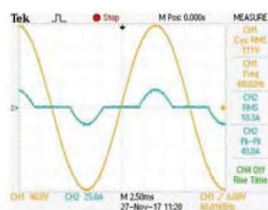
	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750
Range	0-18.75A	0-18.75A	0-28A	0-28A	0-37.5A
Resolution	0.3125mA/16bits	0.3125mA/16bits	0.5mA/16bits	0.5mA/16bits	0.625mA/16bits
Accuracy	±[0.1% of setting + 0.2% of range] at 50/60Hz				

	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
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] at 50/60Hz					

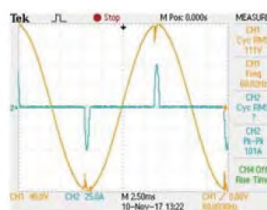
In constant current mode, crest factor and power factor tests can be performed on sine wave voltage sources.



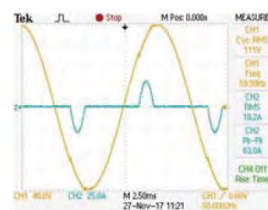
CC Mode



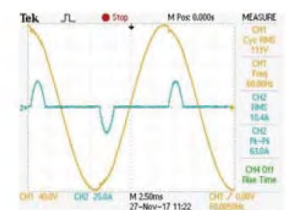
CC mode,
Crest Factor = 2



CC mode,
Crest Factor = 5



CC mode,
Power Factor = +0.5



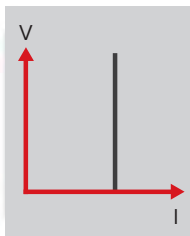
CC mode,
Power Factor = -0.5

LINEAR CC MODE FOR SINE-WAVE, SQUARE-WAVE OR QUASI-SQUARE WAVE, PWM WAVE

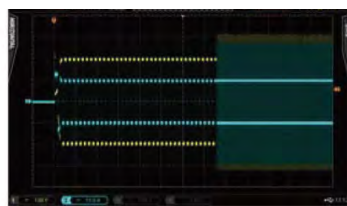
	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750
Range	0-18.75A	0-18.75A	0-28A	0-28A	0-37.5A
Resolution	0.3125mA/16bits	0.3125mA/16bits	0.5mA/16bits	0.5mA/16bits	0.625mA/16bits
Accuracy	±[0.1% of setting + 0.2% of range] at 50/60Hz				

	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
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] at 50/60Hz					

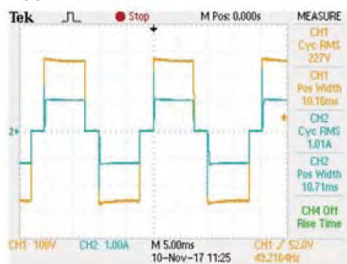
In linear constant current mode, both sine wave and non-sine wave voltage sources can be tested. The examples below show the testing of a PWM inverter driver step voltage source, as well as an offline UPS sine wave switch to square wave and a square wave switch to a sine wave waveform.



CC Mode



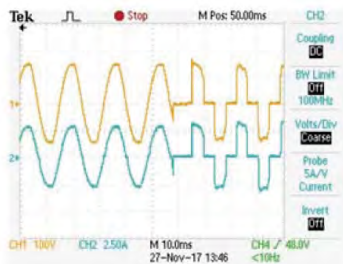
Linear CC Mode, PWM 10A 2.5Hz to 250Hz



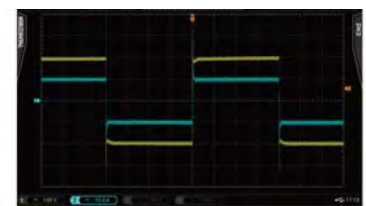
Linear CC Mode, Step 10A



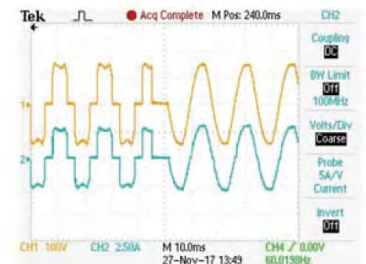
Linear CC Mode, PWM 10A 2.5Hz



Linear CC Mode, UPS Sine to Square Waveform



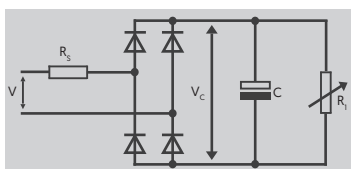
Linear CC Mode, PWM 10A 250Hz



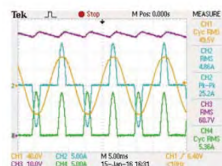
Linear CC Mode, UPS Square to Sine Waveform

RECTIFIED LOAD SIMULATION FOR IEC62040-3 AND IEC61683 TEST SPECIFICATIONS

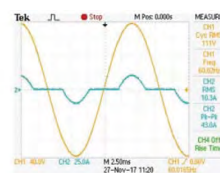
The rectifier load mode is fully compliant with IEC test specification requirements for the UPS, IEC 62040-3 UPS Efficiency Measurement Non-Linear and IEC 61683. The rectifier load mode uses CC + CR load mode and maintains current THD at 80%, to simulate the actual PV Inverter connected to the electronic device.



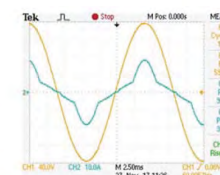
Rectifier Load Mode



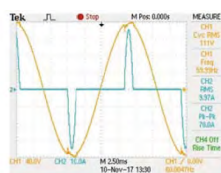
The actual V / A waveform



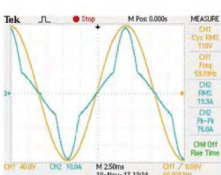
Non-Linear CC mode for UPS test



110V, 5A + 22ohm Test



110V, 10A + 11ohm Test



PV Inverter test Non-Linear CC + Resistive mode (CC+CR)

	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750
CONSTANT RESISTANCE MODE					
Range	3.2Ω - 64kΩ	3.2Ω - 64kΩ	2.0Ω - 40kΩ	2.0Ω - 40kΩ	1.6Ω - 32kΩ
Resolution ¹	0.0052083mS / 16bits	0.0052083mS / 16bits	0.0078137mS / 16bits	0.0083333mS / 16bits	0.010416mS/16bits
Accuracy	±0.2% of [setting + range] at 50/60Hz				
CONSTANT VOLTAGE MODE					
Range	50-350Vrms / 500Vdc				
Resolution	0.1V				
Accuracy	±[0.1% of setting + 0.1% of range] @ 50/60Hz				
CONSTANT POWER MODE					
Range	1875W	2800W	2800W	3750W	3750W
Resolution	0.1W				
Accuracy	±[0.1% of setting + 0.1% of range] @ 50/60Hz				
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 to 1 Lagging or Leading				
Resolution	0.01				
Accuracy	1% F.S.				

	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
CONSTANT RESISTANCE MODE						
Range	1Ω - 20kΩ	0.8Ω - 16kΩ	0.533Ω - 10.666kΩ	0.533Ω - 10.666kΩ	0.533Ω - 10.666kΩ	0.533Ω - 10.666kΩ
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] at 50/60Hz					
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	15000W	18750W	22500W
Resolution	0.1W	0.1W	1W	1W	1W	1W
Accuracy	±[0.2% of setting + range] @ 50/60Hz					
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 to 1 Lagging or Leading					
Resolution	0.01					
Accuracy	1% F.S.					

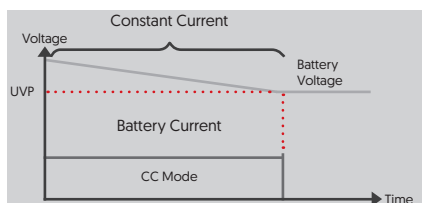
¹1 ms (millisiemens) is the unit of conductance [G]. One siemens is equal to 1kΩ



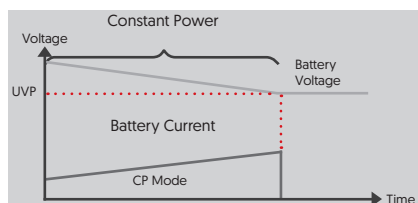
BATTERY DISCHARGE FUNCTION (CC,LIN,CR,CP)

ALL ELPA-SINE MODELS	
UVP (VTH)	50 - 350Vrms / 500Vdc
Battery Discharge Time	1 - 99999 seconds (>27H)

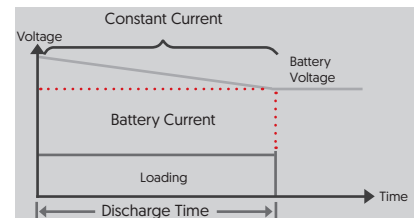
The ELPA-SINE has three inbuilt battery discharge tests. The test results can be directly displayed on the LCD display for battery AH capacity, the voltage value after discharge and the cumulative discharge time.



CC + UVP Battery Discharge Mode (Test 1)



CP + UVP Battery Discharge Mode (Test 2)



Programmed Battery Discharge Time (Test 3)

UPS EFFICIENCY MEASUREMENT

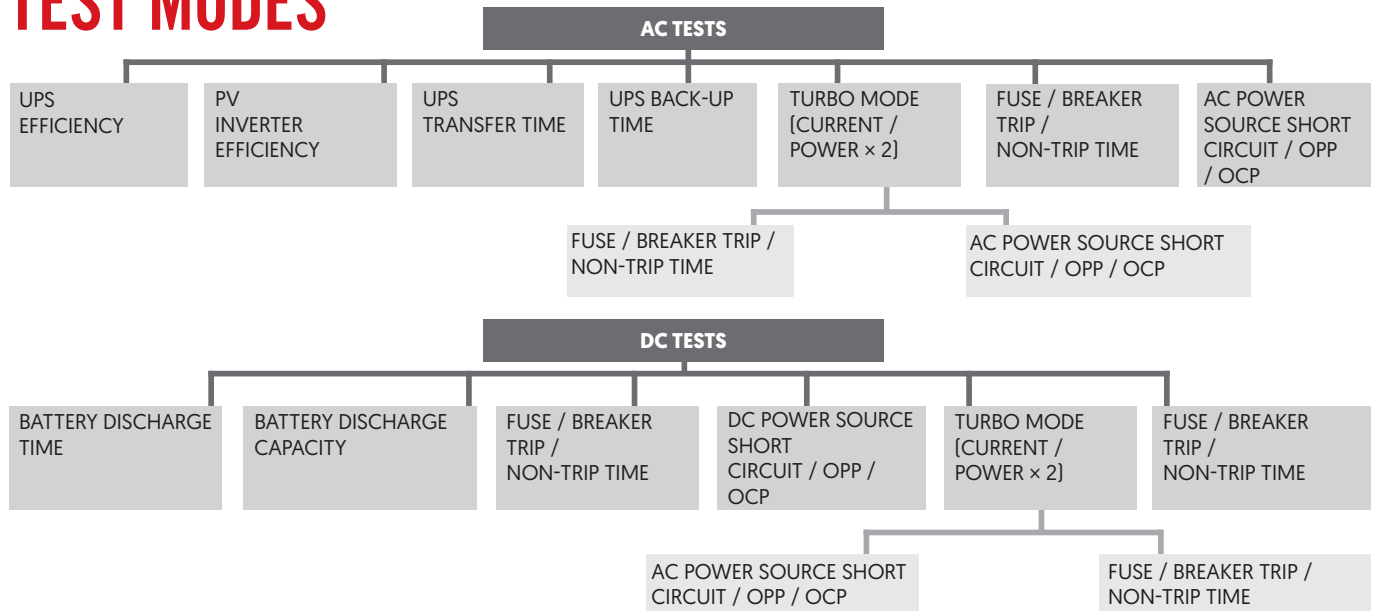
	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750	
Mode Type	Non-linear mode					
Operating Frequency	Auto ; 40-440Hz					
Current Range	0 - 18.75A	0 - 18.75A	0 - 28A	0 - 28A	0 - 37.5A	
PF Range	0 to 1					
	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
Mode Type	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 to 1					

MEASURING EFFICIENCY FOR PV SYSTEMS, POWER CONDITIONERS FOR THD 80%

	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750	
Mode Type	Resistive + non-linear mode					
Operating Frequency	Auto ; 40-440Hz					
Current Range	0 - 18.75A	0 - 18.75A	0 - 28A	0 - 28A	0 - 37.5A	
Resistive Range	3.2Ω - 64kΩ	3.2Ω - 64kΩ	2.0Ω - 40kΩ	2.0Ω - 40kΩ	1.6Ω - 32kΩ	
	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
Mode Type	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	1Ω - 20kΩ	0.8Ω - 16kΩ	0.533Ω - 10.666kΩ	0.533Ω - 10.666kΩ	0.533Ω - 10.666kΩ	0.533Ω - 10.666kΩ

UPS BACK-UP FUNCTION (CC,LIN,CR,CP)

ALL ELPA-SINE MODELS	
UVP (VTH)	50 - 350Vrms / 500Vdc
UPS Back-Up Time	1 - 99999 seconds (>27H)



UPS TRANSFER TIME

	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750	
Current Range	0 - 18.75A	0 - 18.75A	0 - 28A	0 - 28A	0 - 37.5A	
UVP [VTH]	2.5V					
Time Range	0.15ms-999.99ms					
	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
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					

TURBO MODE

	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750	
Maximum Current (for up to 1 second)	37.5Arms [ON] (x2) ² , 18.75Arms [OFF]	37.5Arms [ON] (x2) ² , 18.75Arms [OFF]	56Arms [ON] (x2) ² , 28.0Arms [OFF]	56Arms [ON] (x2) ² , 28Arms [OFF]	75Arms [ON] (x2) ² , 37.5Arms [OFF]	
	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
Maximum Current (for up to 1 second)	112Arms [ON] (x2) ² , 56Arms [OFF]	150Arms [ON] (x2) ² , 75Arms [OFF]	225Arms [ON] (x2) ² , 112.5Arms [OFF]	225Arms [ON] (x2) ² , 112.5Arms [OFF]	225Arms [ON] (x2) ² , 112.5Arms [OFF]	225Arms [ON] (x2) ² , 112.5Arms [OFF]

FUSE TEST MODE

	ALL ELPA-SINE MODELS
Trip / Non-Trip Time	0.1s - 1s [ON] / 0.1s - 9999.9s [OFF]
Meas. Accuracy	±0.003 seconds
Repeat Time	0-255

SHORT/OPP/OCP TEST FUNCTION

	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750
Short Time (TURBO ON/OFF)	0.1s-1s / 0.1s-10s or cont.				
OPP/OCP Step Time (TURBO ON/OFF)	100ms, up to 10 steps / 100ms				
OCP Istop (TURBO ON/OFF)	37.5Arms [ON] ² , 18.75Arms [OFF]	37.5Arms [ON] ² , 18.75Arms [OFF]	56Arms [ON] ² , 28Arms [OFF]	56Arms [ON] ² , 28Arms [OFF]	75Arms [ON] ² , 37.5Arms [OFF]
OPP Pstop (TURBO ON/OFF)	3750W [ON], 1875W [OFF]	5600W [ON], 2800W [OFF]	5600W [ON], 2800W [OFF]	7500W [ON], 3750W [OFF]	7500W [ON], 3750W [OFF]

² Turbo mode for up to 2 × the Current and Power rating support Fuse, Short/OCP/OPP test function

SHORT/OPP/OCF TEST FUNCTION

	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
Short Time (TURBO ON/OFF)	0.1s - 1s [ON] / 0.1s - 10s or continuous [OFF]					
OPP/OCF Step Time (TURBO ON/OFF)	100ms, up to 10 steps [ON] / 100ms [OFF]					
OCF Istop (TURBO ON/OFF)	112Arms [ON], 56Arms [OFF]	150Arms [ON], 75Arms [OFF]	225Arms [ON], 112.5Arms [OFF]	225Arms [ON], 112.5Arms [OFF]	225Arms [ON], 112.5Arms [OFF]	225Arms [ON], 112.5Arms [OFF]
OPP Pstop (TURBO ON/OFF)	11200W [ON], 5600W [OFF]	15000W [ON], 7500W [OFF]	22500W [ON], 11250W [OFF]	30000W [ON], 15000W [OFF]	37500W [ON], 18750W [OFF]	45000W [ON], 22500W [OFF]

PROGRAMMABLE INRUSH CURRENT SIMULATION: ISTART - ISTOP / TSEP

	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750
Istart, Inrush Start Current	0 - 37.5A	0 - 37.5A	0 - 56A	0 - 56A	0 - 75A
Inrush Step Time	0.1ms - 100ms				
Istop, Inrush Stop Current	0 - 18.75A	0 - 18.75A	0 - 28A	0 - 28A	0 - 37.5A

	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
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

	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750
S1 and S2 Current	0 - 37.5A	0 - 37.5A	0 - 56A	0 - 56A	0 - 75A
T1 and T2 Time	0.01s - 0.5s				
S3 Current	0 - 18.75A	0 - 18.75A	0 - 28A	0 - 28A	0 - 37.5A
T3 Time	0.01s - 9.99s or continuous				

	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
S1 and S2 Current	0 - 112A	0 - 150A	0 - 225A	0 - 225A	0 - 225A	0 - 225A
T1 and T2 Time	0.01s - 0.5s					
S3 Current	0 - 56A	0 - 75A	0 - 112.5A	0 - 112.5A	0 - 112.5A	0 - 112.5A
T3 Time	0.01s - 9.99s or continuous					

MEASUREMENTS

VOLTAGE READBACK VOLTMETER

	ALL ELPA-SINE MODELS
Range	500V
Resolution	0.01V
Accuracy	±0.05% of (reading + range)
Parameter	Vrms, V Max/Min, +/-Vpk

CURRENT READBACK AMMETER

	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750
Range	9.375Arms / 18.75Arms	9.375Arms / 18.75Arms	14Arms / 28Arms	14Arms / 28Arms	18.75Arms / 37.5Arms
Resolution	0.2mA / 0.4mA	0.2mA / 0.4mA	0.3mA / 0.6mA	0.3mA / 0.6mA	0.4mA / 0.8mA
Accuracy	±0.05% of (reading + range) at 50/60Hz, ±0.2% of (reading + range)				
Parameter	Irms, IMax, IMin, +/-Ipk				

CURRENT READBACK AMMETER

	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
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% (reading + range) at 50/60Hz					
Parameter	I _{rms} , I _{Max} , I _{Min} , +/-I _{pk}					

POWER READBACK WATTMETER

	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750
Range	1875W	2800W	2800W	3750W	3750W
Resolution	0.03125W	0.05W	0.05W	0.0625W	0.0625W
Accuracy	±0.1% of (reading + range)				
VA Meter	V _{rms} × Arms Correspond To V _{rms} and Arms				

	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
Range	5600W	7500W	11250W	15000W	18750W	22500W
Resolution	0.1W	0.125W	0.1875W	0.25W	0.3125W	0.375W
Accuracy	±0.2% of (reading + range)					
VA Meter	V _{rms} × Arms Correspond To V _{rms} and Arms					

MISCELLANEOUS

POWER FACTOR METER	
Range	±0.000-1.000
Accuracy	±{0.002 ± [(0.001/PF) × F]}

FREQUENCY METER	
Range	DC, 40-440Hz
Accuracy	0.1%

METERS FOR OTHER PARAMETERS	
Values	VA, VAR, CF_I, I _{peak} , I _{max} , I _{min} , V _{max} , V _{min} , I _{HD} , V _{HD} , I _{THD} , V _{THD}

PROTECTION

STANDARD FEATURES

	ELPA-SINE 1875	ELPA-SINE 2800-LC	ELPA-SINE 2800	ELPA-SINE 3750-LC	ELPA-SINE 3750
Over Power Protection	≈1968.75Wrms or programmable	≈2940Wrms or programmable	≈2940Wrms or programmable	≈3937.5Wrms or programmable	≈3937.5Wrms or programmable
Over Current Protection	≈19.687Arms or programmable	≈19.687Arms or programmable	≈29.4Arms or programmable	≈29.4Arms or programmable	≈39.375Arms or programmable
Over Voltage Protection	≈367.5Vrms / 525Vdc				
Over Temperature Protection	Yes				

	ELPA-SINE 5600	ELPA-SINE 7500	ELPA-SINE 11250	ELPA-SINE 15000	ELPA-SINE 18750	ELPA-SINE 22500
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	≈58.8Arms or programmable	≈78.75Arms or programmable	≈118.125Arms or programmable	≈118.125Arms or programmable	≈118.125Arms or programmable	≈118.125Arms or programmable
Over Voltage Protection	≈367.5Vrms / 525Vdc					
Over Temperature Protection	Yes					

Every effort is made to ensure that the information provided within this technical summary is accurate. However, ETPS Ltd must reserve the right to make changes to the published specifications without prior notice. Where certain operating parameters are critical for your application we advise that they be confirmed at the time of order. ETPS Ltd specialises in modifying its proven platforms to suit your needs. Please contact our office if your requirement is non-standard. Please note that your actual unit may differ from those shown.



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Tel: +44 (0) 1246 452909
Sales: 0800 612 95 75
sales@etps.co.uk
www.etps.co.uk

ETPS Ltd
Unit 14, The Bridge
Beresford Way, Chesterfield
S41 9FG



POSITIVE PROBLEM SOLVING