

34000A Series

High Power DC Electronic Load



HIGH POWER DC ELECTRONIC LOAD



PRODIGIT
INSTRUMENT PROFESSIONAL

PRODIGIT ELECTRONICS CO., LTD.

No. 7-1, Zhongxing Rd., Tucheng Dist., New Taipei City 236, Taiwan (R.O.C.)
TEL : 886-2-2918-2620 FAX : 886-2-2912-9870
<http://www.prodigit.com> E-mail : sales@prodigit.com.tw



34000A Series Compact High Power DC Electronic Load



60V
600V
1000V

5kW~
40kW

24
Models
Type



Features

- Maximum power up to 320KW
- Maximum up to 8 units master / slave parallel control
- 5 digit V/A/W Meter.
- High-speed measurement and communication transmission.
- Large LCD Display、setting values can be adjusted by rotary knob or push button.
- Voltage、Current and Watt value can be displayed simultaneously.
- Capable for Power Factor Correction (PFC) Test. (for 600V,1000V models)
- OCP、OPP test function automatically.
- Power ON status can be set.

- CC, CR, CV, CP, Dynamic and Short operation mode.
- **SHORT time setting.**
- Protections against I,W,°C and over-voltage alert.
- **Voltage meter display the polarity positive ("+") or negative ("−") is selectable.**
- Optional Interface : GPIB、RS232、USB、LAN.
- 0.7V @ 1000A is on Static condition, and the starting voltage must be greater than 5V , if on Dynamic condition that is 5V @ 1000A.
- **Built-in soft-start circuit function allowing the U.U.T. power supply to be directly connected to the 342XA、343XA series load input terminal, no longer need a large relay switch with an external soft-start circuit.**

Descriptions

- 34000A Series has its own control and display panel, CC / CR / CV / CP / Dynamic modes, 150 sets Store / Recall memory which provides load set-up more efficiently, also can be remote controlled via GPIB、RS232、USB and LAN interface.
- **SHORT time setting and SHORT_VH, SHORT_VL setting function, also can measure Short Voltage and Current.**
- Dynamic can be simulated under CC, CP mode. The current Rise / Fall slew rate can be adjusted individually and there is an external signal input for a Arbitrary Waveform to simulate load current.
- **Single key for OCP、OPP test function will be more efficiency and accuracy on OCP、OPP testing.**
- Programmable Load ON/OFF voltage, GO/NG meter check, Voltage meter display " + " or " − " is selectable and 150 sets Store/Recall larger memory is much advance feature for each different application.
- 150 sets test parameter and status storage function, user can recall the storage memory real time in accordance with the auto sequence requirement.
- Maximum Voltage up to 1000V provide an idea testing solution for Power Factor Correction test.
- **Master / Slave control units maximum are up to 1 MASTER, 7 SLAVES.**

Applications

- Voltage / Current source
- SMPS transient response
- CV / Current limit testing and battery emulation
- Battery charger
- Battery discharge
- R&D Quality Control
- ATE system
- Production testing

Specifications

MODEL	34105A	34110A	34115A	34120A	34125A
Power	5kW	10kW	15kW	20kW	25kW
Current	0~100A	0~1000A	0~100A	0~1000A	0~100A
Voltage	0 ~ 60V	0 ~ 60V	0 ~ 60V	0 ~ 60V	0 ~ 60V
Min. Operating Voltage	0.1V@100A	0.7V@1000A*	0.1V@100A	0.7V@1000A*	0.1V@100A
Protections					
Over Power Protection (OPP)			105%		
Over Current Protection (OCP)			104%		
Over Voltage Protection (OVP)			105%		
Over Temp Protection (OTP)			Yes		
Constant Current Mode					
Range ²	100A	1000A	100A	1000A	100A
Resolution	1.6mA	16mA	1.6mA	16mA	1.6mA
Accuracy	± 0.05% of (Setting + Range)				
Constant Resistance Mode					
Range	3600Ω~0.06Ω	0.06Ω~0.001Ω	3600Ω~0.06Ω	0.06Ω~0.001Ω	3600Ω~0.06Ω
Resolution	277μS	0.001mΩ	277μS	0.001mΩ	277μS
Accuracy	± 0.2% of (Setting + Range)				
Constant Voltage Mode					
Range			60V		
Resolution			1mV		
Accuracy	± 0.05% of (Setting + Range)				
Constant Power Mode					
Range	500W	5000W	1000W	10000W	1500W
Resolution	8mW	80mW	16mW	160mW	24mW
Accuracy	± 0.1% of (Setting + Range)				
Constant Voltage + Current Limit Mode					
Range	60V	1000A	60V	1000A	60V
Resolution	1mV	16mA	1mV	16mA	1mV
Accuracy	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)	±0.05% of (Setting+Range)
Constant Voltage + Power Limit Mode					
Range	60V	5000W	60V	10000W	60V
Resolution	1mV	80mW	1mV	160mW	240mW
Accuracy	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)	±0.05% of (Setting+Range)
MPPT Mode					
Algorithm			P&O		
Load mode			CV		
P&O interval			1000ms~60000ms ; resolution 1000ms		
Dynamic Mode					
Timing					
Thigh & Tlow			0.150~9.999 / 99.99 / 999.9 / 9999ms		
Resolution			0.001 / 0.01 / 0.1 / 1ms		
Accuracy			1μs / 10μs / 100μs / 1ms + 50ppm		
Slew Rate	24mA~1.5A/μs	240mA~15A/μs	24mA~1.5A/μs	240mA~15A/μs	24mA~1.5A/μs
Resolution	6mA/μs	60mA/μs	6mA/μs	60mA/μs	6mA/μs
Min. Rise Time			66.7μs (typical)		
Accuracy			± (5% of Setting) ±10μs		
Current					
Range	0~100A	100~1000A	0~100A	100~1000A	0~100A
Resolution	1.6mA	16mA	1.6mA	16mA	1.6mA
Measurement					
Voltage Read Back					
Range (5 Digital)	0~6V	6~60V	0~6V	6~60V	0~6V
Resolution	0.1mV	1mV	0.1mV	1mV	0.1mV
Accuracy	± 0.025% of (Reading + Range)				
Current Read Back					
Range (5 Digital)	0~100A	100~1000A	0~100A	100~1000A	0~100A
Resolution	1.6mA	16mA	1.6mA	16mA	1.6mA
Accuracy	± 0.05% of (Reading + Range)				
Power Read Back					
Range (5 Digital)	500W	5000W	1000W	10000W	1500W
Resolution	0.1W	1W	0.1W	1W	0.1W
Accuracy	± 0.06% of (Reading + Range)				
General					
Short Circuit					
Current			1000A		
Load ON Voltage			0.1~25V		
Load OFF Voltage			0~25V		
Power Consumption	600Wmax				
Operating Temperature ⁴		1000Wmax	1450Wmax	1900Wmax	2350Wmax
0~40°C					
Dimension (HxDxD)	573x647x766mm	573x647x766mm	728x647x766mm	885x647x766mm	1041x647x766mm
HxWxD (Not included wheels)	469x647x766mm	469x647x766mm	625x647x766mm	781x647x766mm	937x647x766mm
Weight	100 Kg	130 kg	170 kg	220 kg	280 kg
Safety & EMC			CE		

Cooling : Advanced Fan Cooled

Input AC Power : ① Load-20kW (include) : 100~230 Vac ±10% , 50/60Hz
② Load-25kW above (include) : 200~230 Vac ±10% , 50/60Hz

Note *1 : 0.7V @ 1000A is on Static condition, and the starting voltage must be greater than 5V, if on Dynamic condition that is 5V @ 1000A

Note *2 : The range is automatically or forcing to range II only in CC mode

Note *3 : Power F.S. = Vrange F.S. x Irange F.S.

Note *4 : Operating temperature range is 0~40°C, All specifications apply for 25°C±5°C, Except as noted

Order Information

Optional interface :

Options :

① GPIB Card

Hook ring

② RS232 Card



③ USB Card



④ LAN Card



34105A 60V, 1000A, 5kW **34110A** 60V, 1000A, 10kW **34115A** 60V, 1000A, 15kW **34120A** 60V, 1000A, 20kW **34125A** 60V, 1000A, 25kW

Specifications

MODEL	34215A	34220A		34225A		34230A		34235A						
Power	15KW		20KW		25KW		30KW		35KW					
Current	0 ~ 48A	0 ~ 480A	0 ~ 64A	0 ~ 640A	0 ~ 80A	0 ~ 800A	0 ~ 96A	0 ~ 960A	0 ~ 112A	0 ~ 1120A				
Voltage					0 ~ 600V									
Min. Operating Voltage	20V @ 480A		20V @ 640A		20V @ 800A		20V @ 960A		20V @ 1120A					
Protections														
Over Power Protection (OPP)					105%									
Over Current Protection (OCP)					104%									
Over Voltage Protection (OVP)					105%									
Over Temp Protection (OTP)					Yes									
Constant Current Mode														
Range ^{*1}	48A	480A	64A	640A	80A	800A	96A	960A	112A	1120A				
Resolution	0.768mA	7.68mA	1.024mA	10.24mA	1.28mA	12.8mA	1.536mA	15.36mA	1.792mA	17.92mA				
Accuracy					$\pm 0.05\%$ of (Setting + Range)									
Constant Resistance Mode														
Range	15000Ω~1.25Ω	1.25Ω~0.021Ω	11250Ω~0.9375Ω	0.9375Ω~0.01575Ω	11250Ω~0.75Ω	0.75Ω~0.0126Ω	12500Ω~0.625Ω	0.625Ω~0.0105Ω	6428.4Ω~0.5357Ω	0.5357Ω~0.009Ω				
Resolution	13.3μs	0.021mΩ	17.7μs	0.01575mΩ	22.2μs	0.0126mΩ	26.6μs	0.0105mΩ	31.1μs	0.009mΩ				
Accuracy					$\pm 0.2\%$ of (Setting + Range)									
Constant Voltage Mode														
Range					600V									
Resolution					10mV									
Accuracy					$\pm 0.05\%$ of (Setting + Range)									
Constant Power Mode														
Range	1500W	15000W	2000W	20000W	2500W	25000W	3000W	30000W	3500W	35000W				
Resolution	24mW	240mW	32mW	320mW	40mW	400mW	48mW	480mW	56mW	560mW				
Accuracy					$\pm 0.1\%$ of (Setting + Range)									
Constant Voltage + Current Limit Mode														
Range	600V	480A	600V	640A	600V	800A	600V	960A	600V	1120A				
Resolution	10mV	7.68mA	10mV	10.24mA	10mV	12.8mA	10mV	15.36mA	10mV	17.92mA				
Accuracy	$\pm 0.05\%$ of (Setting+Range)	$\pm 1.0\%$ of (Setting+Range)	$\pm 0.05\%$ of (Setting+Range)	$\pm 1.0\%$ of (Setting+Range)	$\pm 0.05\%$ of (Setting+Range)	$\pm 1.0\%$ of (Setting+Range)	$\pm 0.05\%$ of (Setting+Range)	$\pm 1.0\%$ of (Setting+Range)	$\pm 0.05\%$ of (Setting+Range)	$\pm 1.0\%$ of (Setting+Range)				
Constant Voltage + Power Limit Mode														
Range	600V	15000W	600V	20000W	600V	25000W	600V	30000W	600V	35000W				
Resolution	10mV	240mW	10mV	320mW	10mV	400mW	10mV	480mW	10mV	560mW				
Accuracy	$\pm 0.05\%$ of (Setting+Range)	$\pm 1.0\%$ of (Setting+Range)	$\pm 0.05\%$ of (Setting+Range)	$\pm 1.0\%$ of (Setting+Range)	$\pm 0.05\%$ of (Setting+Range)	$\pm 1.0\%$ of (Setting+Range)	$\pm 0.05\%$ of (Setting+Range)	$\pm 1.0\%$ of (Setting+Range)	$\pm 0.05\%$ of (Setting+Range)	$\pm 1.0\%$ of (Setting+Range)				
MPPT Mode														
Algorithm					P&O									
Load mode					CV									
P&O interval					1000ms~60000ms ; resolution 1000ms									
Dynamic Mode														
Timing														
Thigh & Tlow					0.050~9.999 / 99.99 / 999.9 / 9999ms									
Resolution					0.001 / 0.01 / 0.1 / 1ms									
Accuracy					1μs / 10μs / 100μs / 1ms + 50ppm									
Slew Rate	38.4mA~2.4A/μs	384mA~24A/μs	51.2mA~3.2A/μs	512mA~32A/μs	64mA~4A/μs	640mA~40A/μs	76.8mA~4.8A/μs	768mA~48A/μs	0.0896A~5.6A/μs	0.896A~56A/μs				
Resolution	9.6mA/μs	96mA/μs	12.8mA/μs	128mA/μs	16mA/μs	160mA/μs	19.2mA/μs	192mA/μs	22.4mA/μs	224mA/μs				
Min. Rise Time					20μs(typical)									
Accuracy					$\pm (5\% \text{ of Setting}) \pm 10\mu s$									
Current														
Range	0~48A	48~480A	0~64A	64~640A	0~80A	80~800A	0~96A	96~960A	0~112A	112~1120A				
Resolution	0.768mA	7.68mA	1.024mA	10.24mA	1.28mA	12.8mA	1.536mA	15.36mA	1.792mA	17.92mA				
Measurement														
Voltage Read Back														
Range (5 Digital)	0~60V	60~600V	0~60V	60~600V	0~60V	60~600V	0~60V	60~600V	0~60V	60~600V				
Resolution	1mV	10mV	1mV	10mV	1mV	10mV	1mV	10mV	1mV	10mV				
Accuracy					$\pm 0.025\%$ of (Reading + Range)									
Current Read Back														
Range (5 Digital)	0~48A	48~480A	0~64A	64~640A	0~80A	80~800A	0~96A	96~960A	0~112A	112~1120A				
Resolution	0.768mA	7.68mA	1.024mA	10.24mA	1.28mA	12.8mA	1.536mA	15.36mA	1.792mA	17.92mA				
Accuracy					$\pm 0.05\%$ of (Reading + Range)									
Power Read Back														
Range (5 Digital)	1500W	15000W	2000W	20000W	2500W	25000W	3000W	30000W	3500W	35000W				
Resolution	0.1W	1W	0.1W	1W	0.1W	1W	0.1W	1W	0.1W	1W				
Accuracy					$\pm 0.06\%$ of (Reading + Range)									
General														
Short Circuit														
Current	480A		640A		800A		960A		1120A					
Load ON Voltage					0.4 ~ 100V									
Load OFF Voltage					0 ~ 100V									
Power Consumption	1450Wmax		1900Wmax		2350Wmax		2800Wmax		3250Wmax					
Operating Temperature ^{*3}					0~40°C									
Dimension (HxWxD)	728x647x766mm		885x647x766mm		1041x647x766mm		1197x647x766mm		1353x647x766mm					
HxWxD (Not included wheels)	625x647x766mm		781x647x766mm		937x647x766mm		1093x647x766mm		1249x647x766mm					
Weight	170 kg		220 kg		280 kg		340 kg		390 kg					
Safety & EMC					CE									

Cooling : Advanced Fan Cooled
Input AC Power : ① Load-20KW (include) : 100~230 Vac $\pm 10\%$, 50/60Hz
② Load-25KW above (include) : 200~230 Vac $\pm 10\%$, 50/60Hz

Note *1 : The range is automatically or forcing to range II only in CC mode

Note *2 : Power F.S. = Vrange F.S. x Irange F.S.

Note *3 : Operating temperature range is 0~40°C, All specifications apply for 25°C±5°C,
Except as noted

Order Information

Optional interface :	Options :
① GPIB Card	Hook ring
② RS232 Card	
③ USB Card	
④ LAN Card	
	x4
34215A	600V,480A,15KW
34220A	600V,640A,20KW
34225A	600V,800A,25KW
34230A	600V,960A,30KW
34235A	600V,1120A,35KW

Specifications

MODEL	34325A		34330A		34335A		34340A	
Power	25KW		30KW		35KW		40KW	
Current	0 ~ 25A	0 ~ 250A	0 ~ 30A	0 ~ 300A	0 ~ 35A	0 ~ 350A	0 ~ 40A	0 ~ 400A
Voltage					0 ~ 1000V			
Min. Operating Voltage	10V @ 250A		10V @ 300A		10V @ 350A		10V @ 400A	
Protections								
Over Power Protection (OPP)					105%			
Over Current Protection (OCP)					104%			
Over Voltage Protection (OVP)					104%			
Over Temp Protection (OTP)					Yes			
Constant Current Mode								
Range [*]	25A	250A	30A	300A	35A	350A	40A	400A
Resolution	0.4mA	4mA	0.48mA	4.8mA	0.56mA	5.6mA	0.64mA	6.4mA
Accuracy				± (0.1% of Setting + 0.2% of Range)				
Constant Resistance Mode								
Range	4800Ω~4Ω	4Ω~0.04008Ω	3999.6Ω~3.333Ω	3.333Ω~0.033396Ω	3428.4Ω~2.857Ω	2.857Ω~0.0286266Ω	3000Ω~2.5Ω	2.5Ω~0.02505Ω
Resolution	4.166μS	0.0668mΩ	5μS	0.05566mΩ	5.833μS	0.047711mΩ	6.66μS	0.04175mΩ
Accuracy				±0.2% of (Setting + Range)				
Constant Voltage Mode								
Range				10 ~ 1000V				
Resolution				16mV				
Accuracy				± 0.05% of (Setting + Range)				
Constant Power Mode								
Range	2500W	25000W	3000W	30000W	3500W	35000W	4000W	40000W
Resolution	40mV	400mW	48mV	480mW	56mW	560mW	64mW	640mW
Accuracy [*]				± 0.1% of (Setting + Range)				
Constant Voltage + Current Limit Mode								
Range	1000V	250A	1000V	300A	1000V	350A	1000V	400A
Resolution	16mV	4mA	16mV	4.8mA	16mV	5.6mA	16mV	6.4mA
Accuracy	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)
Constant Voltage + Power Limit Mode								
Range	1000V	25000W	1000V	30000W	1000V	35000W	1000V	40000W
Resolution	16mV	400mW	16mV	480mW	16mV	560mW	16mV	640mW
Accuracy	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)	±0.05% of (Setting+Range)	±1.0% of (Setting+Range)
MPPT Mode								
Algorithm				P&O				
Load mode				CV				
P&O interval				1000ms~6000ms ; resolution 1000ms				
Dynamic Mode								
Timing								
Thigh & Tlow				0.050~9.999 / 99.99 / 999.9 / 9999ms				
Resolution				0.001 / 0.01 / 0.1 / 1ms				
Accuracy				1μs / 10μs / 100μs / 1ms + 50ppm				
Slew Rate	0.02A~1.25A/μs	0.2A~12.5A/μs	0.024A~1.5A/μs	0.24A~15A/μs	0.028A~1.75A/μs	0.28A~17.5A/μs	0.032A~2A/μs	0.32A~20A/μs
Resolution	0.005A/μs	0.05A/μs	0.006A/μs	0.06A/μs	0.007A/μs	0.07A/μs	0.008A/μs	0.08A/μs
Min. Rise Time				20μs (typical)				
Accuracy				± (5% of Setting) ±10μs				
Current								
Range	0~25A	25~250A	0~30A	30~300A	0~35A	35~350A	0~40A	40~400A
Resolution	0.4mA	4mA	0.48mA	4.8mA	0.56mA	5.6mA	0.64mA	6.4mA
Measurement								
Voltage Read Back								
Range (5 Digital)	0~100V	100~1000V	0~100V	100~1000V	0~100V	100~1000V	0~100V	100~1000V
Resolution	1.6mV	16mV	1.6mV	16mV	1.6mV	16mV	1.6mV	16mV
Accuracy				±0.025% of (Reading + Range)				
Current Read Back								
Range (5 Digital)	0~25A	25~250A	0~30A	30~300A	0~35A	35~350A	0~40A	40~400A
Resolution	0.4mA	4mA	0.48mA	4.8mA	0.56mA	5.6mA	0.64mA	6.4mA
Accuracy				± 0.05% of (Reading + Range)				
Power Read Back								
Range (5 Digital)	2500W	25000W	3000W	30000W	3500W	35000W	4000W	40000W
Resolution	0.1W	1W	0.1W	1W	0.1W	1W	0.1W	1W
Accuracy [*]				± 0.06% of (Reading + Range)				
General								
Short Circuit								
Current		250A		300A		350A		400A
Load ON Voltage				10.4 ~ 200V				
Load OFF Voltage				0 ~ 200V				
Power Consumption		2350 Wmax		2800Wmax		3250Wmax		3700Wmax
Operating Temperature [*]				0~40°C				
Dimension (HxWxD)	1041x647x766mm		1197x647x766mm		1353x647x766mm		1509x647x766mm	
HxWxD (Not included wheels)	937x647x766mm		1093x647x766mm		1249x647x766mm		1405x647x766mm	
Weight		280 kg		340 kg		390 kg		430 kg
Safety & EMC				CE				

Cooling : Advanced Fan Cooled

Input AC Power : ① Load-20KW (include) : 100~230 Vac ±10% , 50/60Hz
 ② Load-25KW above (include) : 200~230 Vac ±10% , 50/60Hz

Note *1 : The range is automatically or forcing to range II only in CC mode

Note *2 : If the operating voltage is higher than 600V, the accuracy specification is 0.5% F.S.

Note *3 : Power F.S. = Vrange F.S. x Irange F.S.

Note *4 : Operating temperature range is 0~40°C, All specifications apply for 25°C±5°C,
 Except as noted

Order Information

Optional interface :	Options :
① GPIB Card	Hook ring
② RS232 Card	
③ USB Card	
④ LAN Card	x4
34325A 1000V , 250A , 25KW	34330A 1000V , 300A , 30KW
34335A 1000V , 350A , 35KW	34340A 1000V , 400A , 40KW