



Datasheet

Programmable D.C. Electronic Load

Stock number : 180-4794 **RSPEL-3032E**

EN



FEATURES

- 2.5-500 V Min. Operating Voltage(dc) : 2.5 V at 15 A, 1.25 V at 7.5 A
- 7 Operating Modes : CC, CV, CR, CP, CC+CV, CR+CV, CP+CV
- Normal Sequence Function: Max Steps: 1000 steps/Step Time:1 ms~999 h 59 min 59 s(3599940 sec) Fast Sequence Function: Max Steps:1000 steps/Step Time:25 us~600 ms
- Soft Start
- BATT Test Automation:Max Test Time:999h: 59min 59s(3599940 sec):Max Test AH:9999.99Ah
- OCP, OPP Test Automation
- Max. Slew Rate : 2.5 A/ μ s
- Dynamic Mode
- Protection : OVP, OCP, OPP, OTP, RVP, UVP
- Remote Sense
- Integrate Voltage, Current and Power Measurement Functions
- External Voltage or Resistance Control
- Rear Panel BNC, Trigger IN/OUT
- Analog External Control
- USB/GPIB(Optional)

RSPEL-3032E programmable single-channel electronic load. In the series, RSPEL-3032E provides 300 W (2.5V~500V/15A) current sink capability. RSPEL-3032E has an easy-to-read LCD panel and user-friendly interface. This model features high speed and accurate measurement capability for electronic component, battery, portable charger and power products that require low to medium power consumption.

The RSPEL-3032E is designed for current sink operation starting from 16 mA and aims at measurement applications, including charger, adapter, various power supply equipment, and portable charger.

The RSPEL-3032E has seven operating modes. Among them, four basic operating modes are constant current, constant voltage, constant resistance, and constant power. Three other combined operating modes are constant current + constant voltage, constant resistance + constant voltage, constant power + constant voltage. Users can select operating modes based upon products' test requirements. For C.C. mode, electronic load will sink a constant current according to the set current value; for C.V. mode, electronic load will attempt to sink sufficient current to control the source voltage to the programmed value; for C.R. mode, electronic load will sink a current linearly proportional to input voltage according to the set resistance value; for C.P. mode, electronic load will initiate load power sinking operation (load voltage x load current) in accordance with the programmed power setting.

To meet the requirements of different test conditions, the Static function is to sink a constant current; the Dynamic function is to periodically switch between two sink conditions, and the Sequence function is to provide tests for more than two sink conditions. The sequence function can be divided into Normal Sequence and Fast Sequence. Normal Sequence is the most flexible mean of generating complex sequences that can facilitate users to establish a set of changing current sink conditions based upon different sinking conditions (CC, CR, CV or CP mode) and time (adjustable range: 1 ms to 999h 59 min 59 s). Fast sequence allows time resolution of 25 μ s to be set for the smallest step. Setting parameters for multiple steps can simulate consecutive current changes of various real load conditions. For instance, while using an electronic load to test a power-driven tool's power supply, we can first obtain waveforms by an oscilloscope and a current probe from the tool, and subsequently, use the obtained waveforms to edit simulated current waveforms, via electronic load's sequence function, to test the power-driven tool and to analyze its operational status. The Soft Start function allows users to determine the rise time of current sink that is to decide the required time to reach electronic load's set current, resistance or power value. Setting a proper rise time for Soft Start is effective to counter output voltage fluctuation caused by DUT's (power supply) transient output current. It is worth noting, General DC loads do not have the soft start function. When conducting high speed current sink operation, the inductance effect on the cable connecting electronic load and DUT will lead to transient voltage drop on electronic load's input terminal, therefore, that will result in Voltage Non-monotonic increase. RSPEL-3032E soft start function not only allows output voltage to be Monotonic increase, but also prevents inrush current and surge voltage from happening on DUT. For instance, tests using a power supply, LED and a DC load (activate the soft start function) can prevent inrush current and surge voltage from causing damages on LED.

The built-in BATT Test Automation of RSPEL-3032E provides battery discharge applications with more flexible discharge stop setting as well as rise and fall Slew Rate for discharge current settings. OCP, OPP test Automation for DUT (ex. Power Supply), provide users with high resolution measurement values to verify DUT's activation point. Provide users with measurement results so as to help them determine whether DUT's actual over protection activation point meets the regulations. Other than that, RSPEL-3032E provides users with analog control terminal to control RSPEL-3032E from external voltage, external resistance and switch. Analog control terminal can also monitor electronic load's status and display protective alarms.



SPECIFICATIONS

	Power Range Voltage Current Min. Operating Voltage(dc)	300W Low 2.5 ~ 500V 0 ~ 1.5A 2.5V ~ 1.5A	300W High 2.5 ~ 500V 0 ~ 15A 2.5V ~ 15A
STATIC MODE	Constant Current Mode Range Setting Range Resolution Accuracy	0 ~ 1.5A 0 ~ 1.53A 0.05mA (T ^{±1})±(0.1% of set + 0.1% of FS) +Vin/500kΩ (Full scale of high range)	0 ~ 15A 0 ~ 15.3A 0.5mA (T ^{±1})±(0.1% of set + 0.2% of FS)+Vin/500kΩ (Full scale of high range)
	Constant Resistance Mode Range Setting Range Resolution(30000 Steps) Accuracy	6s ~ 0.0002s(0.16666Ω ~ 5kΩ)(300W/50V) ; 0.6s ~ 0.00002s(1.6666Ω ~ 50kΩ)(300W/500V) 6s ~ 0.0002s(0.16666Ω ~ 5kΩ)(300W/50V) ; 0.6s ~ 0.00002s(1.6666Ω ~ 50kΩ)(300W/500V) 0.0002s(50V) ; 0.00002s(500V) (T ^{±1})±(0.3% of set + 0.06s) + 0.002ms	
	Constant Voltage Mode Range Setting Range Resolution Accuracy	2.5 ~ 50V 0 ~ 51V 1mV (T ^{±1})±(0.1% of set + 0.1% of FS) (Full scale of Low range)	2.5 ~ 500V 0 ~ 510V 10mV (T ^{±1})±(0.1% of set + 0.1% of FS) (Full scale of High range)
	Constant Power Mode Range Setting Range Resolution Accuracy	0W ~ 30W(1.5A) 0W ~ 30.6W 1mW (T ^{±1})±(0.6 % of set + 1.4 % of FS (Full scale of H range) + VinΛ2/500 kΩ	0W ~ 300W(15A) 0W ~ 306W 10mW
DYNAMIC MODE	General T1& T2	0.05ms ~ 30ms/Res:1μs;30ms ~ 30s/Res:1ms	
	Accuracy Slew Rate (Accuracy 10%) Slew Rate Resolution Slew Rate Accuracy of Setting	1μs/1ms±200ppm 0.25 ~ 62.5mA/μs 0.25mA/μs ±(10% + 15μs) *1 Time to reach from 10 % to 90 % when the current is varied from 2 % to 100 % (20 % to 100 % in L range) of the rated current.	1μs/1ms±200ppm 2.5 ~ 625mA/μs 2.5mA/μs
	Constant Current Mode Current Setting Range Current Resolution Current Accuracy	0 ~ 1.5A 0 ~ 1.53A 0.05mA ±0.8% FS	0 ~ 15A 0 ~ 15.3A 0.5mA ±0.8% FS
	Constant Resistance Mode Range Setting Range Resistance Resolution Resistance Accuracy	6s ~ 0.0002s(0.16666Ω ~ 5kΩ)(300W/50V) 0.6s ~ 0.00002s(1.6666Ω ~ 50kΩ)(300W/500V) 6s ~ 0.0002s(0.16666Ω ~ 5kΩ)(300W/50V) 0.6s ~ 0.00002s(1.6666Ω ~ 50kΩ)(300W/500V) 30000 steps (T ^{±1})±(1%set + 0.06s) + 0.002ms	
MEASUREMENT	Voltage Readback Range Resolution Accuracy	0 ~ 50V 2mV (T ^{±1})±(0.1% of rdg+0.1% of FS) (Full scale of Low range)	0 ~ 500V 20mV (T ^{±1})±(0.1% of rdg+0.1% of FS) (Full scale of High range)
	Current Readback Range Resolution Accuracy	0 ~ 1.5A 0.05mA (T ^{±1})±(0.1% of rdg+0.1% of FS) (Full scale of High range)	0 ~ 15A 0.5mA (T ^{±1})±(0.1% of rdg+0.2% of FS) (Full scale of High range)
	Power Read back H&L CP Mode L Range	0 ~ 300W 0 ~ 30W	0 ~ 300W 0 ~ 30W
FUNCTION	Sequence(Normal/Fast)	Normal sequence function: Max steps: 1000 steps/Step time: 1ms ~ 999h 59min 59s(3599940 sec) Fast sequence function: Max steps: 1000 steps/Step time: 25us ~ 600ms	
	BATT Test Automation Test Function Soft Start In/Out Terminal Preset Data Protection	Max test time: 999h: 59m: 59s(3599940sec) Max test AH: 9999.99Ah OCP Autotest function, OPP Autotest Function Yes Analog External Control, Current Monitor Output, Trigger In/Out Terminal(BNC) 10 Sets OCP, OPP, UVP, OVP, OTP, RVP	
OTHER	Power Source Interface Dimensions & Weight	100 ~ 120VAC/200 ~ 240VAC, 47 ~ 63Hz USB, GPIB(Optional), Analog control 213.8(W) x 124.0(H) x 400.5(D)mm, Approx. 7.5Kg	

Note : *1 - If the ambient temperature is over 30 °C or below 20 °C, then T = ± |t - 25 °C| x 100ppm/°C x Set
If the ambient temperature is in the range of 20°C~30°C, then T = 0 (t is the ambient temperature)

Specifications subject to change without notice.

ORDERING INFORMATION

RSPEL-3032E 500V/15A/300W Programmable Single-channel D.C. Electronic Load

ACCESSORIES

Quick Start Guide, CD ROM (User Manual, Programming Manual)x1, Power Cord(Region dependent), Front Terminal Washers-spring Washer(M6)x2, GTL-105A Remote Sense Cables(Red x 1, Black x 1)

OPTIONAL ASSESSORIES

GTL-248 GPIB cable, 2.0 m
GTL-246 USB cable, Type A – Type B
PEL-010 Dust Filter
PEL-004 GPIB option
GRA-414-J Rack Mount Kit(JIS)
GRA-414-E Rack Mount Kit(EIA)



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