



IEL-3021/3041

FEATURES

- Operating Voltage (DC) : 1.5V~150V
- Operating Mode : C.C/C.V/C.R/C.P/C.C +C.V/C.R+C.V/C.P+C.V
- Parallel Connection of Inputs for Higher Capacity (Max 1750W)
- Support of High Slew Rate : Max 5A/ μ s
- Run Program Function (Go/No Go Test)
- Sequence Function for High Efficient Load Simulations
- Commands are Compatible With Kikusui PLZ-4W Model (*)
- Dynamic (Switching) Function : 0.0166Hz ~ 20kHz
- Soft Start Function : Off/On (1 ~ 200ms, Res : 1ms)
- Adjustable OCP/OVP/OPP/UVF Setting
- Short Circuit Function
- Timer Function : Elapsed Time of Load on
- Cut Off Time (Auto Load Off Timer) : 1s ~ 999h 59min 59s or Off
- External Channel Control/Monitoring Via Analog Control Connector
- Setup Memories : 100 sets
- 3.5 Inch TFT LCD Display
- Multi Interface : USB 2.0 Device/Host, RS-232C, GPIB (Optional)



The IEL-3000 Series, a single-channel, programmable D.C. electronic load with 0.01mA current resolution and 5A/ μ s current Slew Rate, is very ideal for testing server power supply and SPS (Switching Power Supply) for commercial and industrial computers. For a heavy-duty device like cloud ecosystem running 24-hour nonstop operations, is required to maintain the normal operation of server, Hub, and the equipment of data storage and internet communications. Owing to the increasing demand of data transmission and large scale data storage of telecommunications systems, the infrastructure of internet communications is in the pace of rapid expansion. demand of telecommunications equipment powered by power supply of 2000W and above. The flexible power combination of IEL-3000 meets the test requirements of present high-power power supply. With respect to battery testing applications such as rechargeable battery for electrical tools, battery module and automobile battery, IEL-3000 has two stand-alone models to offer including 175W, 350W. Hence, the IEL-3000 Series fulfills various power testing requirements including medium to low power or high-power power supply.

The IEL-3000 Series has seven operating modes and three operating functions. Among the seven operating modes, four of them are basic operating modes, including constant current, constant voltage, constant resistance, and constant power, and the other three are advanced operating modes including constant current + constant voltage, constant resistance + constant voltage, and constant power + constant voltage. Users must first select operating mode and then operating function based upon the test requirements. Static, Dynamic and Sequence operating functions can be applied to different testing conditions including a fixed load level, switching between two levels or switching among more than two levels. Sequence function is divided into Fast Sequence and Normal Sequence according to the test time of each step. Both Dynamic and Sequence are to assist users to simulate the genuine load change. For instance, IEL-3000 can simulate HEV current consumption to make sure that automobile battery can supply HEV with sufficient power need on the road. By so doing, manufacturers can elevate product quality and reliability.

The adjustable high speed Slew Rate of 5A/ μ s simulates rise and fall speed of different load current so as to test the adequacy of the Response time of power supply. The Soft Start function of the IEL-3000 Series can set current rise time for the moment IEL-3000 is turned on to reduce the abnormal situation of the voltage drop of power supply under test. The adjustable Under Voltage Protection(UVP), Go/NoGo voltage input monitoring function, current monitoring function and Timer Function to control load activation time can be jointly applied to the characteristic tests of battery bleeding to avoid battery damage during bleeding operation. Based upon the functionalities described above, the IEL-3000 Series can test a vast variety of power supply ranging from the fundamental static sink current to complex dynamic load simulations so as to enhance product quality and reliability.

The IEL-3000 Series is a high speed, single channel and programmable D.C. electronic load and its power, functionality, parallel combination and size are listed on the following chart :

MODEL	IEL-3021	IEL-3041
Power	175W	350W
Function	Full-function Single Unit	Full-function Single Unit
Parallel Combination	Parallel with same model, 5 units the maximum	Parallel with same model, 5 units the maximum
Size	Half Rack	Half Rack

SPECIFICATIONS								
Model	IEL-3021				IEL-3041			
CONSTANT POWER MODE								
Voltage	1.5V~150V				1.5V~150V			
Current	35A				70A			
Power	175W				350W			
CONSTANT CURRENT MODE								
Operating Range			0~35A	0~3.5A	0~0.35A	0~70A	0~7A	0~0.7A
Accuracy of Setting	H, M, L		$\pm(0.2\% \text{ of set} + 0.1\% \text{ of f.s}^{*1}) + \text{Vin}^{*2}/500 \text{ k}\Omega$					
Accuracy of Setting(Parallel)	H, M, L		$\pm(1.2\% \text{ of set} + 1.1\% \text{ of f.s}^{*3})$					
Resolution			1mA	0.1mA	0.01mA	2mA	0.2mA	0.02mA
CR MODE								
Operating Range	Range	H	23.3336S~400 μ S (42.857m Ω ~2.5k Ω)			46.6672S~800 μ S (21.428m Ω ~1.25k Ω)		
		M	2.33336S~40 μ S (428.566m Ω ~25k Ω)			4.6667S~80 μ S (214.28m Ω ~12.5k Ω)		
		L	0.233336S~4 μ S (4.28566 Ω ~250k Ω)			0.46667S~8 μ S (2.1428 Ω ~125k Ω)		
Accuracy of Setting	H, M, L		$\pm(0.5\% \text{ of set}^{*4} + 0.5\% \text{ of f.s}^{*5}) + \text{Vin}^{*2}/500\text{k}\Omega$					
Resolution			400 μ S	40 μ S	4 μ S	800 μ S	80 μ S	8 μ S
CONSTANT VOLTAGE MODE								
Operating Range	Range	H	1.5V~150V					
		L	1.5V~15V					
Accuracy of Setting	H, L		$\pm(0.1\% \text{ of set} + 0.1\% \text{ of f.s})$					
Resolution	H, L		10mV/1mV					
Operating Range	Range	H	17.5W~175W			35W~350W		
		M	1.75W~17.5W			3.5W~35W		
		L	0.175W~1.75W			0.35W~3.5W		
Accuracy of Setting	H, M, L		$\pm(0.6\% \text{ of set}^{*5} + 1.4\% \text{ of f.s}^{*6})$					
Resolution			10mW	1mW	0.1mW	10mW	1mW	0.1mW
PARALLEL Mode								
Capacity	875W				1750W			
SLEW RATE								
Setting Range (CC mode)	Range	H	2.5mA/ μ s~2.5A/ μ s			5mA/ μ s~5A/ μ s		
		M	250 μ A/ μ s~250mA/ μ s			500 μ A/ μ s~500mA/ μ s		
		L	25 μ A/ μ s~25mA/ μ s			50 μ A/ μ s~50mA/ μ s		
Setting Range (CR Mode)	Range	H	250 μ A/ μ s~250mA/ μ s			500 μ A/ μ s~500mA/ μ s		
		M	25 μ A/ μ s~25mA/ μ s			50 μ A/ μ s~50mA/ μ s		
		L	2.5 μ A/ μ s~2.5mA/ μ s			5 μ A/ μ s~5mA/ μ s		
Accuracy of Setting	H, M, L		$\pm(10\% \text{ of set}^{*7} + 5\mu\text{s})$					
Resolution			0.1 μ A ~ 1mA			0.2 μ A ~ 2mA		
METER								
Voltmeter	Accuracy	$\pm(0.1\% \text{ of rdg} + 0.1\% \text{ of f.s})$						
Ammeter	Accuracy	$\pm(0.2\% \text{ of rdg} + 0.3\% \text{ of f.s})$						
Ammeter(Parallel Operation)	Accuracy	$\pm(1.2\% \text{ of rdg} + 1.1\% \text{ of f.s.})$						
DYNAMIC MODE								
Operation Mode	CC and CR							
T1 & T2	0.025mS~10mS/Res : 1 μ s ; 1ms~30s/Res : 1ms							
Accuracy	1 μ S/1ms \pm 100ppm							
Slew Rate	Range	H	2.5mA/ μ s~2.5A/ μ s			5mA/ μ s~5A/ μ s		
		M	250 μ A/ μ s~250mA/ μ s			500 μ A/ μ s~500mA/ μ s		
		L	25 μ A/ μ s~25mA/ μ s			50 μ A/ μ s~50mA/ μ s		
Current Accuracy			$\pm 0.4\%$ F.S.			$\pm 0.4\%$ F.S.		
PROTECTION FUNCTION								
Overvoltage protection(OVP)	Adjustable ; Turns off the load at 110% of the rated voltage							
Overcurrent protection(OCP)	0.03A~38.5A(Adjustable)			0.06A~77A(Adjustable)				
Overpower protection(OPP)	0.1W~192.5W(Adjustable)			0.3W~385W(Adjustable)				
Overheat protection(OHP)	Turns off the load when the heat sink temperature reaches 95 °C							
Undervoltage protection(UVP)	Adjustable : Turns off the load when detected can be set in the range of 0 V to 150 V or off by diode Turns off the load when an alarm occurs							
Reverse connection protection(REV)								
POWER SOURCE								
AC100V ~ 230V \pm 10% ; 50Hz / 60Hz \pm 2Hz								
INTERFACE								
USB/RS232/Analog Control (Standard) ; GPIB(Optional)								
DIMENSIONS & WEIGHT								
214.5(W)x124(H)x400(D)mm; Approx. 6kg				214.5(W)x124(H)x400(D)mm; Approx. 7kg				

*1. Full scale of H range.

*2. Vin: input terminal voltage of electronic load.

*3. M range applies to the full scale of H range.

*4. Set = Vin/Rset.

*5. It is not applied for the condition of the parallel operation.

*6. M range applies to the full scale of H range.

*7. Time to reach from 10%~90% when the current is varied from 2%~100%(20%~100% in M range) of the rated current.

ORDERING INFORMATION

IEL-3021 175W Programmable D.C. Electronic Load
IEL-3041 350W Programmable D.C. Electronic Load

ACCESSORIES :

User Manual x 1, Power Cord x 1

OPTIONAL ASSESSORIES

GTL-120 Test Lead (Max 40A)	GTL-251 GPIB-USB-HS (High Speed)
GTL-248 GPIB Cable (2m)	GTL-252 Frame Link Cable (550mm)
GTL-246 USB Cable, USB 2.0A-B Type Cable, 4P	GRA-414-J Rack Mount Kit (JIS) for IEL-3021/3041
GTL-255 Frame Link Cable (300mm)	GRA-414-E Rack Mount Kit (EIA) for IEL-3021/3041

ISO-TECH

P. O. Box 99
 Corby
 Northants NN17 9RS
 England
 Tel: +44(0) 1536 201234