



In high volume manufacturing requires optimization of test system throughput, to maximize production volume without increasing floor space. The PEL-2000 Series electronic loads can help you in a number of ways to achieve this goal.

The PEL-2000 Series that the current trend in semiconductors is towards lower voltages and higher speeds. This trend places similar demands on both the components of semiconductor power units, such as switching power supplies, batteries and DC/DC converters, and also on the electronic loads used for testing. The advent of an electronic load system that satisfies all these needs has been long awaited. The PEL-2000 Series of compact and high-performance modular electronic loads is capable of operating in CC/CR/CV mode. The load system consists of load modules and a main frame. The load modules are inserted into the main frame that also serves as a master unit. The PEL-2002 frame can accommodate up to two load modules, while the PEL-2004 frame can accommodate up to four. The PEL-2000 Series it has including variable slew rate, a switching function, 10 preset memory function, 120 sets setup memories, and a sequence function. For communication, the system is provided with USB and RS-232C interfaces as standard otherwise it also has optional GPIB Interface. Both of RS-232C and GPIB those interfaces support IEEE 488.2 as well as the Standard Commands for Programmable Instruments (SCPI) commands, developed for testing and measuring instruments.

Programmable delay allows for either simultaneous or sequential load changes: This is the most efficient way to conduct testing of multiple output DC power supplies, simulating real-life loading patterns, with a minimum of programming commands.

Increase System Flexibility for future requirements that the most of power supply and battery charger test systems designed today need to test a variety of products and assemblies. In the future, additional products or assemblies may be needed. A flexible family of electronic loads makes present system design and future growth much easier.

When customer were testing high current power supplies that electronic load modules can be operated in parallel to provide addition current sinking capability. There are also have analog control programming and monitoring ports for those applications that utilize as standard interfaces, require custom waveforms, or utilize process control signals.

For a CV power supply, measurement of the output voltage and input voltage should be made after the load is varied from the minimum to the full current rating of the power supply under test. Measurement of the AC input voltage is necessary to ensure that the output voltage change is a result of only the load change, and not from a change in the ac input. To decrease the test time when test throughput is a concern, a regulated AC source providing a predetermined AC input level and frequency can be utilized. This will eliminate the need for the ac input voltage measurement. The output voltage should be allowed the specified settling time before measurements are taken. An electronic load selected for this test must be capable of operating in CC or CR mode, and must have input ratings (voltage, current, and power) sufficient to accommodate the maximum ratings of the power supply under test.

## PEL-2000 Series

### FEATURES

- 10 sets of Preset Memory
- Parallel Operation for Increased Capacity
- Sequence Function to Enable Load Simulations
- External Waveform Control Functions
- High Precision and High Resolution
- Variable Slew Rate
- Multi-Channel System up to 8 Channel Outputs
- Parallel Operation for Increased Capacity
- Sequence Function to Enable Load Simulations
- External Waveform Control Functions
- Delay Control
- OPP/OCP/OVP/OTP Protection all Level Could be Change
- Multi-Interface USB Device/Host, RS-232C, GPIB (Optional)
- 120 Sets Setup Memory

### APPLICATIONS

- R & D Design and Verification for :  
Switching Power Supply 、 Server Power 、 AC/DC Adaptor 、 AC/DC Power Module 、 Power IC 、 DC/DC Power Module 、 Fuse 、 Battery 、 Automotive Wire 、 Switch/Relay
- Laboratories and Educational Facilities
- Product Testing and Quality Assurance

# SPECIFICATIONS

	PEL-2020		PEL-2030			PEL-2040		PEL-2041		
<b>CHANEL RANGE</b>	L/R Low	L/R High	Left N/A	Right Low	Right High	- Low	- High	- Low	- High	
<b>POWER</b>	100W	100W	30W	250W	30W	350W	350W	350W	350W	
<b>CURRENT</b>	0~2A	0~20A	0~5A	0~4A	0~40A	0~7A	0~70A	0~1A	0~10A	
<b>VOLTAGE</b>	1~80V	1~80V	1~80V	1~80V	1~80V	1~80V	1~80V	2.5~500V	2.5~500V	
<b>MIN. OPERATING VOLTAGE(dc)</b>	1.0V at 2A	1.0V at 20A	1.0V at 5A	1.0V at 4A	1.0V at 40A	1.0V at 7A	1V at 70A	2.5V at 1A	2.5V at 10A	
<b>STATIC MODE</b>										
<b>CONSTANT CURRENT MODE</b>	0~2A 0.5mA ±(0.1%set + 0.1%F.S.)		0~5A 1.25mA ±(0.1%set + 0.1%F.S.)			0~7A 1mA ±(0.1%set + 0.1%F.S.)		0~10A 0.2mA ±(0.1%set + 0.1%F.S.)		
<b>CONSTANT RESISTANCE MODE</b>	0.075Ω~300Ω (100W/16V) 3.75Ω~15K (100W/80V) 12bits 300Ω: ±(0.2%set+0.1%) 15KΩ: ±(0.1%set+0.02%) With≥2.5V at input		0.3Ω~1.2KΩ (30W/16V) 15Ω~60K (30W/80V) 12bits 12KΩ: ±(0.2%set+0.1%) 60KΩ: ±(0.1%set+0.01%) With≥2.5V at input			0.0375Ω~150Ω (250W/16V) 1.875Ω~7.5K (250W/80V) 12bits 150Ω: ±(0.2%set+0.1%) 7.5KΩ: ±(0.1%set+0.02%) With≥2.5V at input		0.025Ω~100Ω (350W/16V) 1.25Ω~5K (350W/80V) 12bits 100Ω: ±(0.2%set+0.1%) 5KΩ: ±(0.1%set+0.02%) With≥2.5V at input		1.25Ω~5KΩ (350W/125V) 50Ω~200K (350W/500V) 12bits 5KΩ: ±(0.2%set+0.02%) 200KΩ: ±(0.1%set+0.01%) With≥5V at input
<b>CONSTANT VOLTAGE MODE</b>	1~80V 20mV ±(0.05%set+0.1%F.S.)		1~80V 20mV ±(0.05%set+0.1%F.S.)			1~80V 20mV ±(0.05%set+0.1%F.S.)		2.5~500V 100mV ±(0.05%set+0.1%F.S.)		
<b>DYNAMIC MODE</b>										
<b>CONSTANT CURRENT MODE T1&amp;T2</b>	0.025mS~10mS/Res:1μS 1mS~30S/Res:1mS 1μS/1mS±100ppm		0.025mS~10mS/Res:1μS 1mS~30S/Res:1mS 1μS/1mS±100ppm			0.025mS~10mS/Res:1μS 1mS~30S/Res:1mS 1μS/1mS±100ppm		0.025mS~10mS/Res:1μS 1mS~30S/Res:1mS 1μS/1mS±100ppm		
<b>Slew Rate(±10%set+15μS)</b>	0.32~80mA/μS 0.32mA/μS		0.8~200mA/μS 0.8mA/μS			6.4~1600mA/μS 6.4mA/μS		0.001~2.8A/μS 0.01A/μS		
<b>Slew Rate Resolution</b>	0~2A		0~5A			0~40A		0~70A		
<b>Current</b>	0.5mA		1.25mA			1mA		10mA		
<b>Current Resolution</b>	±0.4% F.S.		±0.4% F.S.			±0.4% F.S.		±0.4% F.S.		
<b>Current Accuracy</b>	±0.4% F.S.		±0.4% F.S.			±0.4% F.S.		±0.4% F.S.		
<b>MEASUREMENT</b>										
<b>VOLTAGE READBACK</b>	0~16V 0.5mV ±(0.05%set + 0.05%F.S.)		0~16V,0~80V 0.5mV,2.5mV ±(0.05%set + 0.05%F.S.)			0~16V 0.5mV ±(0.05%set + 0.05%F.S.)		0~80V 2.5mV ±(0.05%set + 0.05%F.S.)		
<b>CURRENT READBACK</b>	0~2A 0.0625mA ±(0.1%set + 0.1%F.S.)		0~5A 0.15625mA ±(0.1%set + 0.1%F.S.)			0~4A 0.125mA ±(0.1%set + 0.1%F.S.)		0~40A 1.25mA ±(0.1%set + 0.1%F.S.)		
<b>PROTECTIVE</b>	Over Power Protection (±2%set+0.25%F.S.) Range Resolution Over Current Protection (±2%set+0.25%F.S.) Range Resolution Over Voltage Protection (±2%set+0.25%F.S.) Range Resolution Over Temperature Protection Rated Power Protection (±2%set) Value		1~102W 0.5W 0~20.4A 0.05A 1~81.6V 0.2V ≈85°C 110W			1~30.6W 0.15W 0~5.1A 0.0125A 1~81.6V 0.2V ≈85°C 33W			1~255W 1.25W 0~40.8A 0.1A 1~81.6V 0.2V ≈85°C 275W	
<b>GENERAL</b>	SHORT CIRCUIT Current(CC) Voltage(CV) Resistance(CR)		≈2.2/2A ≈22/20A 0V ≈3.75Ω			≈5.5/5A ≈15Ω,≈0.3Ω			≈4.4/4A ≈1.875Ω	
<b>INPUT RESISTANCE(LOAD OFF)</b>	≈44/40A 0V ≈0.0375Ω		≈7.7/7A 0V ≈1.25Ω			≈77/70A 0V ≈0.025Ω		≈1.1/1A 0V ≈50Ω		
<b>WEIGHT</b>	800KΩ (Typical)		800KΩ (Typical)			800KΩ (Typical)		800KΩ (Typical)		
<b>DIMENSIONS &amp; WEIGHT(PEL-202)</b>	Approx. 3.8 kg		272 mm (W) X 200 mm (H) X 581 mm (D) ; Approx. 16.1kg (full modules)							
<b>DIMENSIONS &amp; WEIGHT(PEL-2004)</b>			435 mm (W) X 200 mm (H) X 581 mm (D) ; Approx. 24.8kg (full modules)							

Specifications subject to change without notice. EL-2000GD1DH

## ORDERING INFORMATION

**PEL-2002** Mainframe For Two Load Module  
**PEL-2004** Mainframe For Four Load Module  
**PEL-2020** Programmable D.C. Electronic Load Module  
**PEL-2030** Programmable D.C. Electronic Load Module  
**PEL-2040** Programmable D.C. Electronic Load Module  
**PEL-2041** Programmable D.C. Electronic Load Module

Note : Load module can't be used without mainframe

## ACCESSORIES

**PEL-2002/2004**  
User manual x1, Power cord x1  
**PEL-2020/2030/2040/2041**  
GTL-120 Test lead x 1, GTL-121 Sense lead x 1

## OPTIONAL ASSESSORIES

**PEL-001** GPIB card      **PEL-003** Panel cover      **GTL-248** GPIB cable  
**PEL-002** PEL-2004 Rack mount kit      **GTL-246** USB cable      **GTL-249** Frame link cable

Global Headquarters

### GOOD WILL INSTRUMENT CO., LTD.

No. 7-1, Jhongsing Road, Tucheng City, Taipei County 236, Taiwan  
T +886-2-2268-0389 F +886-2-2268-0639  
E-mail: marketing@goodwill.com.tw

China Subsidiary

### INSTEK ELECTRONIC (SHANGHAI) CO., LTD.

8F, of NO.2 Building, No.889 Yishan Road, Shanghai China  
T +86-21-6485-3399 F +86-21-5450-0789  
E-mail: marketing@instek.com.cn

Malaysia Subsidiary

### GOOD WILL INSTRUMENT (M) SDN. BHD.

27, Persiaran Mahsuri 1/1, Sunway Tunas,  
11900 Bayan Lepas, Penang, Malaysia.  
T +604-6309988 F +604-6309988  
E-mail: sales@goodwill.com.my

U.S.A. Subsidiary

### INSTEK AMERICA CORP.

3661 Walnut Avenue Chino, CA 91710, U.S.A.  
T +1-909-5918358 F +1-909-5912280  
E-mail: sales@instekamerica.com

Japan Subsidiary

### INSTEK JAPAN CORPORATION

4F, Prosper Bldg, 1-3-3 Iwamoto-Cho Chiyoda-Ku,  
Tokyo 101-0032 Japan  
T +81-3-5823-5656 F +81-3-5823-5655  
E-mail: info@instek.co.jp

Korea Subsidiary

### GOOD WILL INSTRUMENT KOREA CO., LTD.

Room No.805, Ace Hightech-City B/D 1Dong,  
Mullae-Dong 3Ga 55-20, Yeongduengpo-Gu, Seoul, Korea  
T +82 2 3439 2205 F +82 2 3439 2207  
E-mail : gwinstek@gwinstek.co.kr



**S J ELECTRONICS**  
POWER • TEST & MEASUREMENT

**0800 583 44 55**

Tel: +44 1536 416 200

Fax: 0800 583 55 66

sales@sjelectronics.co.uk

www.sjelectronics.co.uk

**GW INSTEK**

www.gwinstek.com