PEL-2000 Series

CE RS-232 GPIB USB

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.

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

GW INSTEK Made to Measure Since 1975

SPECIFICATIONS

	PEL-2020		PEL-2030			PEL-2040		PEL-2041	
CHANEL **RANGE** **POWER** **CURRENT** **VOLTAGE** **MIN.OPERATING VOLTAGE(dc)**	L/R Low 100W 0~2A 1~80V 1.0V at 2A	L/R High 100W 0~20A 1~80V 1.0V at 20A	Left N/A 30W 0~5A 1~80V 1.0V at 5A	Right Low 250W 0~4A 1~80V 1.0V at 4A	Right High 250W 0~40A 1~80V 1.0V at 40A	– Low 350W 0~7A 1~80V 1.0V at 7A	– High 350W 0~70A 1~80V 1V at 70A	– Low 350W 0~1A 2.5~500V 2.5V at 1A	– High 350W 0~10A 2.5~500V 2.5V at 10A
STATIC MODE									
CONSTANT CURRENT MODE **Range** **Resolution** **Accuracy**	0~2A 0.5mA ±(0.1%set + 0.1%F.S.)	0~20A 5mA ±(0.1%set + 0.1%F.S.)	0~5A 1.25mA ±(0.1%set + 0.1%F.S.)	0~4A 1mA ±(0.1%set + 0.1%F.S.)	0~40A 10mA ±(0.1%set + 0.2%F.S.)	0~7A 1mA ±(0.1%set + 0.1%F.S.)	0~70A 10mA ±(0.1%set + 0.2%F.S.)	0~1A 0.2mA ±(0.1%set + 0.1%F.S.)	0~10A 2mA ±(0.1%set + 0.2%F.S.)
CONSTANT RESISTANCE MODE **Range** **Resolution** **Accuracy**	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	
CONSTANT VOLTAGE MODE **Range** **Resolution** **Accuracy**	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.)	
DYNAMIC MODE									
CONSTANT CURRENT MODE **T1&T2** **Accuracy**	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	
Slew Rate(±10%set+15μS) **Slew Rate Resolution** **Current** **Current Resolution** **Current Accuracy**	0.32~80mA/μS 0.32mA/μS 0~2A 0.5mA ±0.4% F.S.	3.2~800mA/μS 3.2mA/μS 0~20A 5mA ±0.4% F.S.	0.8~200mA/μS 0.8mA/μS 0~5A 1.25mA ±0.4%F.S.	0.64~160mA/μS 0.64mA/μS 0~4A 1mA ±0.4%F.S.	6.4~1600mA/μS 6.4mA/μS 0~40A 10mA ±0.4%F.S.	0.001~0.28A/μS 0.001A/μS 0~7A 1mA ±0.4%F.S.	0.01 ~ 2.8A/μS 0.01A/μS 0~70A 10mA ±0.4%F.S.	0.16~40mA/μS 0.16mA/μS 0~1A 0.2mA ±0.4%F.S.	1.6~400mA/μS 1.6mA/μS 0~10A 2mA ±0.4%F.S.
MEASUREMENT									
VOLTAGE READBACK **Range** **Resolution** **Accuracy**	0~16V 0.5mV ±(0.05%set +0.05%F.S.)	0~80V 2.5mV ±(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.)	0~16V 0.5mV ±(0.05%set +0.05%F.S.)	0~80V 2.5mV ±(0.05%set +0.05%F.S.)	0~125V 4mV ±(0.05%set +0.05%F.S.)	0~500V 16mV ±(0.05%set +0.05%F.S.)
CURRENT READBACK **Range** **Resolution** **Accuracy**	0~2A 0.0625mA ±(0.1%set +0.1%F.S.)	0~20A 0.625mA ±(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.)	0~7A 0.175mA ±(0.1%set +0.1%F.S.)	0~70A 1.75mA ±(0.1%set +0.1%F.S.)	0~1A 0.032mA ±(0.1%set +0.1%F.S.)	0~10A 0.32mA ±(0.1%set +0.1%F.S.)
PROTECTIVE									
Over Power Protection(±2%set+0.25%F.S.) **Range** **Resolution**	1~102W 0.5W		1~30.6W 0.15W	1~255W 1.25W		1~357W 1.75W		1~357W 1.75W	
Over Current Protection(±2%set+0.25%F.S.) **Range** **Resolution**	0~20.4A 0.05A		0~5.1A 0.0125A	0~40.8A 0.1A		0~71.4A 0.175A		0~10.2A 0.025A	
Over Voltage Protection(±2%set+0.25%F.S.) **Range** **Resolution**	1~81.6V 0.2V		1~81.6V 0.2V	1~81.6V 0.2V		1~81.6V 0.2V		1~510V 1.25V	
Over Temperature Protection	≒85℃		≒85℃	≒85℃		≒85℃		≒85℃	
Rated Power Protection(±2%set) **Value**	110W		33W	275W		385W		385W	
GENERAL									
SHORT CIRCUIT **Current(CC)** **Voltage(CV)** **Resistance(CR)**	≒2.2/2A 0V ≒3.75Ω	≒22/20A 0V ≒0.075Ω	≒5.5/5A 0V ≒15Ω,≒0.3Ω	≒4.4/4A 0V ≒1.875Ω	≒44/40A 0V ≒0.0375Ω	≒7.7/7A 0V ≒1.25Ω	≒77/70A 0V ≒0.025Ω	≒1.1/1A 0V ≒50Ω	≒11/10A 0V ≒1.25Ω
INPUT RESISTANCE(LOAD OFF)	800KΩ(Typical)		800KΩ(Typical)			800KΩ(Typical)		800KΩ(Typical)	
WEIGHT	Approx. 3.8 kg								
DIMENSIONS & WEIGHT(PEL-2002)	272 mm (W) X 200 mm (H) X 581 mm (D) ; Approx. 16.1kg(full modules)								
DIMENSIONS & WEIGHT(PEL-2004)	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-002 PEL-2004 Rack mount kit
PEL-003 Panel cover
GTL-246 USB cable
GTL-248 GPIB cable
GTL-249 Frame link cable

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