



PEL-500 Series

DC Electronic Load

FEATURES

- 5-digit Digital Voltage, Current and Power Meter
- Simultaneous Display of Voltage, Current, and Watts
- Short-circuit Time Can be Set During Short-circuit Test
- Automatic Test Function of Overcurrent Protection/Overpower Protection
- The Battery Discharge Test Function Can Set The Discharge Stop Voltage (Vbatt), Discharge Capacity (Ah, Wh) and Stop Discharge Time
- Surge Test Can Simulate Boot Overshoot Current and Transient Current From Hot Plugging
- Constant Current, Constant Resistance, Constant Voltage, Constant Power and Dynamic Mode
- Overvoltage, Overcurrent, Overpower, Over Temperature Protection and Reverse Polarity Detection
- Voltage Polarity Display Can be Set to Positive Value ("+") or Negative Value ("-")
- Communications Interface: RS-232, USB

GW INSTEK
Simply Reliable

DC Electronic Load



PEL-500 Series



DESCRIPTIONS

- PEL-500 Series stand-alone load has its own control and display panel, CC / CR / CV / CP/ Dynamic modes, also can be controlled intranet via RS232 and USB 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
- The additional Short, OCP, OPP, Batt and Surge test function operated by both manual and remote that will be more efficiency and accuracy on Short, OCP, OPP, Batt and Surge testing
- Programmable loading voltage/unloading voltage, GO / NG meter check, Voltage polarity display can be set to positive value ("+") or negative value ("-") That is much advance feature for each different application

APPLICATIONS

- Voltage/Current Source Test
- Transient Response of Switching Power Supply
- Constant Voltage Mode for Current Limiting Test and Battery Simulation
- Battery Discharge
- R&D, Quality Control
- ATE System
- Production Test

DC Electronic Load

The PEL-500 series single-channel electronic load has a total of 5 models and provides 0~80V/ 0~500V voltage operating ranges and 250~700W power operating range. The series can be applied to R&D, quality control, ATE system and production test, including voltage source/current source test; switching power supply transient response; constant voltage mode for current limiting test; battery simulation; and battery discharge test.

The PEL-500 series provides a 5-digit digital display of voltage, current and power. Users can monitor the measurement data of the DUT at the same time. In order to facilitate users to evaluate whether the DUT can withstand the overshoot current, the PEL-500 series provides Surge test, which can simulate the boot overshoot current and the transient current from hot plugging. The built-in battery discharge test function can determine the conditions for stopping the discharge according to the test requirements of the DUT, including setting the discharge stop voltage (Vbatt), discharge capacity (AH, WH) and stop discharge time.

Users can set the loading voltage/unloading voltage of the PEL-500 series for testing according to the characteristics of the DUT. When the output voltage of the DUT rises to the loading voltage value, the loading starts. When the output voltage drops to the unloading voltage, the loading ends. Users can use the GO/NG function to pre-set the judgment conditions according to the function and specifications of the DUT. The PEL-500 series will automatically generate the judgment results according to the set judgment conditions during the test.

Under the safety test requirements of the power supply, the PEL-500 series not only provides the Short test function, but also provides the automatic test function of overcurrent protection/overpower protection to simplify users' complicated manual operation and verify the OCP/OPP of the DUT's action points. The generated measurement results help users confirm whether the actual operating action points of the DUT for OCP/OPP are within the measurement regulations.

In addition to the function of providing load current waveforms to the oscilloscope via the BNC output terminal of Imonitor, the PEL-500 series also provides overvoltage, overcurrent, overpower and over temperature protection, and reverse polarity detection. When any one of them generates a trigger action, The PEL-500 series will have protective or reminding measures to protect the PEL-500 series from damage due to abnormal operating ranges.

PANEL INSTRUCTIONS



FRONT PANEL

1. LCD Multi-Function Display
2. Operation Function Keys
3. Test Function Keys
4. Knob
5. Load Input
6. V-sense Terminals
7. Imonitor Output
8. Power Switch



BACK PANEL

9. RS-232 Port
10. Alternate Input Switch
11. Heat Sink Fan
12. AC Input Socket
13. USB Port

DC Electronic Load

PRODUCT DESCRIPTION

Surge Function

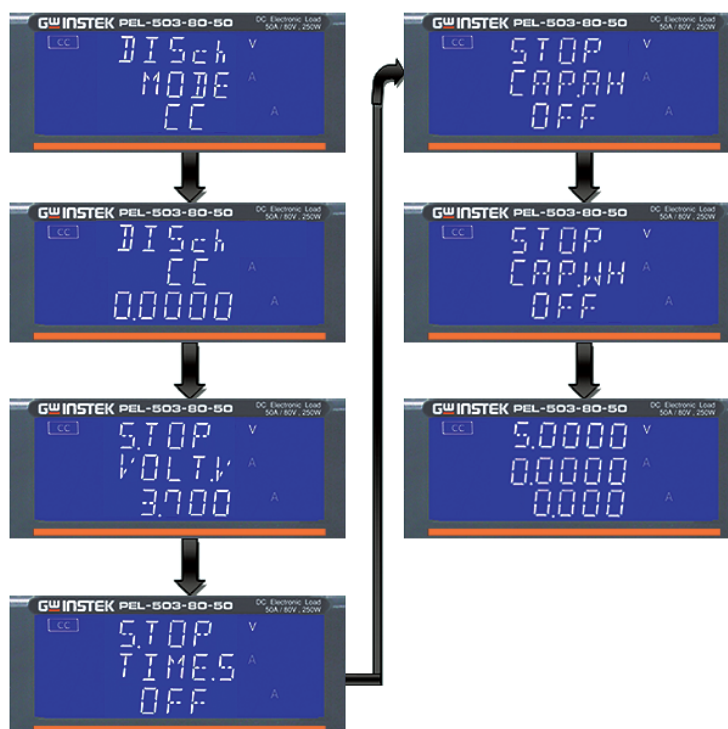
The Surge function allows users to set Surge current, Normal current, Surge Time and Surge STEP according to test requirements. Surge current and Normal current can be set from 0.000A to 50.400A, Surge Time can be set from 10 to 1000ms, and Surge STEP can be set from 1 to 5.



Surge Current Setting

Battery Discharge Test Function

The battery discharge test function can determine the conditions to stop the discharge according to the test requirements of the DUT, including setting the stop discharge voltage (Vbatt), discharge capacity (AH, WH) and stop discharge time.



Battery Discharge Setting Processes

GO/NG Function

The GO/NG function is applied to monitor the test result. When the test result exceeds the preset upper/lower limit, the front panel display screen will display NG. Otherwise, GO is displayed. The GO/NG function can edit the working procedures of the test in CC mode/CR mode/CV mode/CP mode. After the test procedures are executed, the test result will be displayed on the front panel display screen, which is represented by GO or NG.

DC Electronic Load

Model		PEL-503-80-50		PEL-504-80-70		PEL-504-500-15		PEL-507-80-140		PEL-507-500-30			
INPUT RATINGS													
Power(Watt)		250 W		350 W		350 W		700 W		700 W			
Current(Ampere)		50 A		70 A		15 A		140 A		30 A			
Voltage(Volt)		80 V		80 V		500 V		80 V		500 V			
Min. Operating Voltage		1.0V @ 50A		1.2V @ 70A		6V @ 15A		0.9V @ 140A		3V @ 30A			
PROTECTIONS													
Over Power Protection(OPP)		≒262.5W		≒367.5W		≒367.5W		≒735W		≒735W			
Over Current Protection(OCP)		≒52.5A		≒73.5A		≒15.75A		≒147A		≒31.5A			
Over Voltage Protection(OVP)		≒84V		≒84V		≒525V		≒84V		≒525V			
Over Temp. Protection(OTP)		YES		YES		YES		YES		YES			
CC Mode													
Range		0~5.04~50.4A		0~7.02~70.2A		0~1.5~15A		0~14.04~140.4A		0~3~30A			
Resolution		0.084mA/0.84mA		0.117mA/1.17mA		0.025mA/0.25mA		0.234mA/2.34mA		0.05mA/ 0.5mA			
Accuracy		±0.1% of (SETTING + RANGE)											
CR Mode													
Range		0.016~1.6~96000Ω		0.0114~1.14~68400Ω		0.4~40~240000Ω		0.0057~0.57~34200Ω		0.2~20~120000Ω			
Resolution		26.666μΩ/0.010416mSiemens		19μΩ/0.014619mSiemens		666.667μΩ/0.416μSiemens		9.5μΩ/29.239μSiemens		333.334μΩ/0.833μSiemens			
Accuracy		±0.2% of (SETTING + RANGE)											
CV Mode													
Range		0~8.1~81V		0~8.1~81V		0~60~500V		0~8.1~81V		0~60~500V			
Resolution		0.135mV/1.35mV		0.135mV/1.35mV		1mV/10mV		0.135mV/1.35mV		1mV/10mV			
Accuracy		±0.05% of (SETTING + RANGE)											
CP Mode													
Range		0~25.02~250.2W		0~35.04~350.4W		0~35.04~350.4W		0~70.02~700.2W		0~70.02~700.2W			
		(Imax=r1:5A, r2:50A)		(Imax=r1:7A, r2:70A)		(Imax=r1:1.5A, r2:15A)		(Imax=r1:14A, r2:140A)		(Imax=r1:3A, r2:30A)			
Resolution		0.417mW/4.17mW		0.584mW/5.84mW		0.584mW/5.84mW		1.167mW/11.67mW		1.17mW/117mW			
Accuracy		±0.5% of (SETTING + RANGE)											
Dynamic Mode													
THIGH/TLOW		10μS to 9.999 Sec											
Resolution		0.001/0.01/0.1/1mS											
Slew rate		L	0.032~2A/μs		0.0464~2.90A/μs		1~62.5mA/μs		0.0096~0.6A/μs		2~125mA/μs		
		H	3.2~200mA/μs		4.64~290mA/μs		10~625mA/μs		0.096~6A/μs		20~1250mA/μs		
Accuracy		±5%±10μs											
Measurement													
Voltage Read Back		Range (5 Digital)		0~8.1~81V		0~8.1~81V		0~60~500V		0~8.1~81V		0~60~500V	
		Resolution		0.135mV/1.35mV		0.135mV/1.35mV		1mV/10mV		0.135mV/1.35mV		1mV/10mV	
		Accuracy		±0.025% of (READING+ RANGE)									
Current Read Back		Range (5 Digital)		0~5.04~50.4A		0~7.02~70.2A		0~1.5~15A		0~14.04~140.4A		0~3~30A	
		Resolution		0.084mA/0.84mA		0.117mA/1.17mA		0.025mA/0.25mA		0.234mA/2.34mA		0.05mA/ 0.5mA	
		Accuracy		±0.1% of (READING+ RANGE)									
Power Read Back		Range (5 Digital)		25W	250W	35W	350W	35W	350W	70W	700W	70W	700W
		Resolution		0.001W	0.01W	0.001W	0.01W	0.001W	0.01W	0.001W	0.01W	0.001W	0.01W
		Accuracy		±0.1% of (READING+ RANGE)									
Surge Test													
Surge & Normal current		0~50A		0~70A		0~15A		0~140A		0~30A			
Surge time		10~1000ms		10~1000ms		10~1000ms		10~1000ms		10~1000ms			
Surge step		1~5		1~5		1~5		1~5		1~5			
Battery Discharge Test													
UVP		0~81V		0~81V		0~500V		0~81V		0~500V			
Time		1~99999 Sec		1~99999 Sec		1~99999 Sec		1~99999 Sec		1~99999 Sec			
Capacity		0.1~19999.9AH/0.1~19999.9WH											
Others													
Load ON Voltage		0.1~25V				0.4~100V		0.1~25V		0.4~100V			
Accuracy		1% of (SETTING + RANGE)											
Load OFF Voltage		0~25V				0~100V		0~25V		0~100V			
Accuracy		0.05% of (SETTING + RANGE)											
Imonitor (Non-isolated)		5.04 A/V		7.02 A/V		1.5 A/V		14.04 A/V		3 A/V			
Current Monitor		Full scale: 10V											
Accuracy		0.5% of (SETTING + RANGE)											
Typical Short Resistance		0.018Ω		0.0169Ω		0.367Ω		0.0053Ω		0.087Ω			
Max. short Current		50A		70A		15A		140A		30A			
Power input		115/230 Vac±10%, 50/60Hz											
Interface (Standard)		USB/RS232											
Power Consumption		40 VA						60 VA					
Dimension (HxWxD)		205 x 123 x 477mm		205 x 123 x 477mm		205 x 123 x 477mm		205 x 231 x 480mm		205 x 231 x 480mm			
Weight		5.3kg		5.3kg		5.3kg		10.3kg		10.3kg			

DIMENSIONS



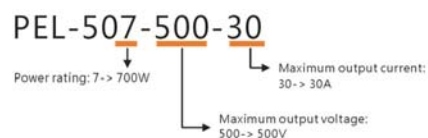
PEL-507-80-140 / PEL-507-500-30



PEL-503-80-50 / PEL-504-80-70 / PEL-504-500-15

ORDERING INFORMATION

PEL-503-80-50	80V/50A/250W DC Electronic Load
PEL-504-80-70	80V/70A/350W DC Electronic Load
PEL-504-500-15	500V/15A/350W DC Electronic Load
PEL-507-80-140	80V/140A/700W DC Electronic Load
PEL-507-500-30	500V/30A/700W DC Electronic Load



OPTIONAL ACCESSORIES

GTL-238	RS-232 Cable, 9-pin, M-F Type, 1000mm
GTL-246	USB Cable, USB 2.0, A-B Type, 1200mm

Note: * Regarding the product delivery date, please contact your regional sales representative.

GTL-238 RS-232 Cable, 9-pin, M-F Type, 1000mm



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