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

CE RS-232 USB

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

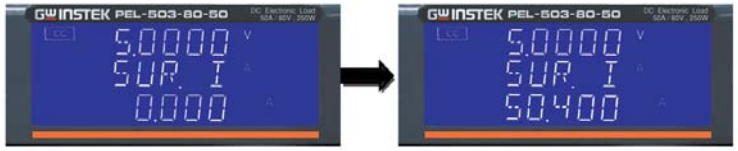
9. RS-232 Port
10. Alternate Input Switch
11. Heat Sink Fan
12. AC Input Socket
13. USB Port

DC Electronic Load

PRODUCT DESCRIPTION

Surge Function

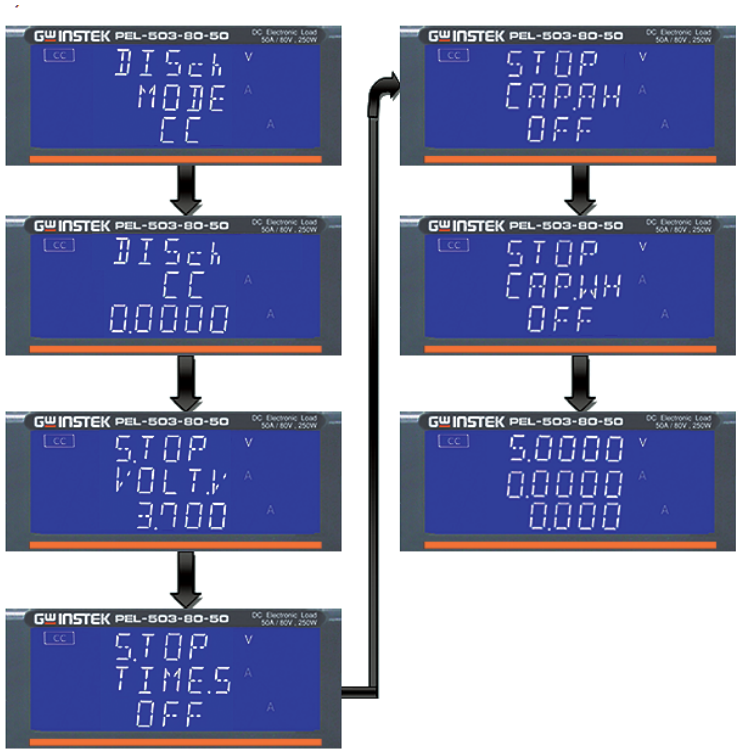
The Surge function allows users to set Surge current, Normal current, Surge Time and Surge STEP according to test requirements. Surge current and Normal current can be set from 0.000A to 50.400A, Surge Time can be set from 10 to 1000ms, and Surge STEP can be set from 1 to 5.



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	0.4~40~2400000Ω	0.0057~0.57~34200Ω	0.2~20~1200000Ω
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

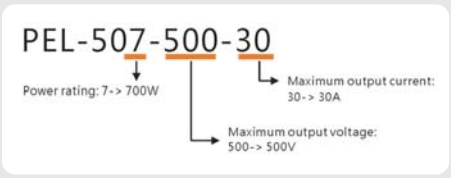
DIMENSIONS

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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