

PEL-5000G Series

High Power DC Electronic Load

FEATURES

- 4U/6K High Power Density Design Also for Bench Testing
- Turbo Mode Function, Which Allows 1.5 Times the Rated Power or Current to be Used Within Two Seconds
- Turbo Mode can be Used with OCP/OPP/BMS/Short Mode/ Surge Mode/Hot Plug-In Testing
- High Tolerance to Environmental Temperature, with 4k/5kW Models not Affected by Environmental Temperature in Power Usage
- Can set the Power-on Status Value
- Short Circuit Duration Can be set Within Short Circuit Test
- Voltage Meter Display Can be Configured as Polarity Positive ("+") or Negative("-")
- Optional Interface : GPIB, RS232, USB, LAN
- Protection function Testing for Battery BMS
- Protection Against V, I, W, and $^\circ\!\mathbb{C}$



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PEL-5000G Series



DESCRIPTIONS

- PEL-5000G Series module has its own control and display panel, CC/CR/CV/CP/Dynamic modes, also can be controlled via RS232, Ethernet, USB and GPIB interface
- The new Turbo mode is designed for overload or protection testing, which includes OCP, OPP, Short for AC/DC or DC/DC power source; Over Charge/Discharge and Short for Battery BMS protection; and Blow/Not Blow testing for Fuse, Breaker or PTC Current Protection Components
- Support Short, OCCP and OCDP protection tests for battery BMS protection testing, the peak current before protection and protection response time are measured
- BMS, Fuse, OCP and OPP single-key test functions on the module make test more efficient
- Dynamic can be simulated under CC, CP mode. The current Rise/Fall slew rate can be adjusted individually and there is an external signal input so that load can have a simulated Specific Load Current Waveform
- SHORT duration setting and SHORT_VH, SHORT_VL setting function, also can measure Short Voltage and Current
- Programmable LOAD ON/OFF voltage, GO/NG meter check, Voltage meter display " + " or " - " is selectable and 150 sets Store/Recall larger memory is much advance feature for each different application
- 150 sets test parameter and status storage function can call the storage memory real time in accordance with the auto sequence requirement, at any time to tune out the stored memory for use

APPLICATIONS

- Voltage/Current Source SMPS Transient Response
- Voltage Source Current Limit Testing and Battery Emulation for Charger Testing
- Battery Discharge Capacity
- Lithium battery BMS Charge and Discharge Protection
- R&D, Quality Control
- ATE System
- Production Testing







PEL-5004G-150-400

PEL-5005G-150-500

PEL-5006G-150-600



PEL-5004G-600-280





PEL-5005G-600-350

PEL-5006G-600-420



PEL-5004G-1200-160



PEL-5005G-1200-200



PEL-5006G-1200-240

MODEL	PEL-5004	G-150-400	PEL-5005C	-150-500	PEL-5006G	-150-600
Power ^{°1} Current Voltage	0 ~ 4kW 0 ~ 400A	0 ~ 6kW max.*1 0 ~ 600A max.*1 150V	0 ~ 5kW 0 ~ 500A	0 ~ 7.5kW max.*1 0 ~ 750A max.*1 150V	0 ~ 6kW 0 ~ 600A	0 ~ 9kW max.*1 0 ~ 900A max.*1 150V
Min. Operating Voltage Protections		⊅400A	0.7V(⊅500A		₱600A
Over Power Protection(OPP) Over Current Protection(OCP) Over Voltage Protection(OVP) Over Temp Protection(OTP) Constant Current Mode	105% 104% 105% 90°C±5°C					
Range ^{°2} Resolution Accuracy ^{°3}	0 ~ 40A 0.64mA	0 ~ 400A 6.4mA	0 ~ 50A 0.80mA + 0.05% of /S	0 ~ 500A 8.0mA etting + Range)	0 ~ 60A 0.96mA	0 ~ 600A 9.6mA
Constant Resistance Mode Range Resolution	22.5kΩ ~ 0.375Ω 44μS	0.375Ω ~ 0.0018Ω 6.25μΩ	18kΩ ~ 0.3Ω 56μS	0.3Ω - 0.0015Ω 5μΩ	15kΩ ~ 0.25Ω 67μS	0.25Ω ~ 0.0012Ω 4.167μΩ
Accuracy Constant Voltage Mode Range	± 0.1%(Vin / Setting)±0.1% IF.S.	± 0.1% of (Setting + Range)±0.1% IF.S	± 0.1%(Vin / Setting)±0.1% IF.S.	± 0.1% of (Setting + Range)±0.1% IF.S	± 0.1%(Vin / Setting) ±0.1% IF.5	± 0.1% of (Setting + Range) ±0.1% IF.5
Resolution Accuracy			2.5	mV etting + Range)		
Constant Power Mode Range Resolution Accuracy ^{°4}	0 - 400W 6.4mW	400 – 4kW 64mW	0 ~ 500W 8mW ± 0.2% of (Se	500 ~ 5kW 80mW tting + Range)	0 ~ 600W 9.6mW	600 ~ 6kW 96mW
Constant Voltage Mode + Current Limit I Range Resolution	150V 2.5mV	400A 6.4mA	150V 2.5mV	500A 8mA	150V 2.5mV	600A 9.6mA
Accuracy ^{*4} Constant Voltage Mode + Power Limit M	± 0.05% of (Setting + Range) ode	± 1.0% of (Setting + Range)	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range)	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range)
Range Resolution Accuracy ⁵⁴	150V 2.5mV ± 0.05% of (Setting + Range)	4kW 64mW ± 1.0% of (Setting + Range)	150V 2.5mV ± 0.05% of (Setting + Range)	5kW 80mW ± 1.0% of (Setting + Range)	150V 2.5mV ± 0.05% of (Setting + Range)	6kW 96mW ± 1.0% of (Setting + Range)
Turbo Mode ^{*5} Short / OCP / OPP Test Function Max. Current	0FF 400A	0N 600A	0FF 500A	ON 750A	0FF 600A	ON 900A
Max. Power Test Accuracy ^{°6} Short Time	4000W 100 ~ 10000ms	6000W 100 – 2000ms	5000W ± 1.0% of (Re 100 ~ 10000ms	7500W ading + Range) 100 - 2000ms	6000W 100 ~ 10000ms	9000W 100 ~ 2000ms
Setting. Accuracy Short V Hi	Continuous	100 ~ 2000ms		ms .00V / Resolution : 0.0025V	Continuous	100 ~ 2000ms
Short V Lo OCP Time (Tstep)	100ms	20ms	Setting range : 0.00V - 150 100ms	.00V / Resolution : 0.0025V 20ms	100ms	20ms
Setting. Accuracy OCP ISTAR / ISTEP / ISTOP OCP VTH	Setting range : 0.00A - 400.00A / Resolution : 6.4mA	Setting range : 0.00A - 600.00A / Resolution : 9.6mA	Setting range : 0.00A - 500.00A / Resolution : 8.0mA Setting range : 0.00V - 150	ms Setting range : 0.00A - 750.00A / Resolution : 12mA .00V / Resolution : 0.0025 V	Setting range : 0.00A - 600.00A / Resolution : 9.60mA	Setting range : 0.00A - 900.00A / Resolution : 14.4mA
OPP Time (Tstep) Setting. Accuracy OPP PSTAR / PSTEP / PSTOP	100ms Setting range : 0.00W - 4000.0W / Resolution : 64.0mW	20ms Setting range : 0.00W - 6000.0W / Resolution : 96.0mW	100ms ±5 Setting range : 0.00W - 5000.0W / Resolution : 80.0mW	20ms ms Setting range : 0.00W - 7500.0W / Resolution : 120mW	100ms Setting range : 0.00W - 6000.0W / Resolution : 96mW	20ms Setting range : 0.00W - 9000.0W / Resolution : 144mW
OPP VTH BMS Test Mode*7		•	Setting range : 0.00V - 150	.00V / Resolution : 0.0025V	•	•
Max. Current Meas. Accuracy ⁷⁶ Short test Time	400A	600A		esolution : 0.01ms	600A	900A
Meas. Accuracy Setting Accuracy	Setting range : 0.19A - 200.00A /	Setting range : 0.28A - 300.00A /		02ms 05ms Setting range : 0.36A - 375.00A /	Setting range : 0.28A - 300.00A /	Setting range : 0.43A - 450.00A /
Short ITH OCP ISTAR	Resolution : 6.4mA Setting range : 0.64A - 400.00A /	Resolution : 9.6mA Setting range : 0.96A - 600.00A / Resolution : 9.6mA	Resolution : 8.0mA Setting range : 0.80A - 500.00A /	Resolution : 12mA Setting range : 1.20A - 750.00A / Resolution : 12mA	Resolution : 9.6mA Setting range : 0.96A - 600.00A /	Resolution : 14.4mA Setting range : 1.44A - 900.00A / Resolution : 14.4mA
OCP TSTEP	Resolution : 6.4mA 0.05 ~ 10ms 11 ~ 1000ms	0.05 ~ 10ms	Resolution : 8.0mA 0.05 ~ 10ms 11 ~ 1000ms	0.05 ~ 10ms	Resolution : 9.6mA 0.05 ~ 10ms 11 ~ 1000ms	0.05 ~ 10ms
Meas. Accuracy OCP ISTEP	±0.1ms / ±0.5ms Setting range : 0.00A - 400.00A / Resolution : 6.4mA	±0.5ms Setting range : 6.00A - 600.00A / Resolution : 9.6mA	±0.1ms / ±0.5ms Setting range : 0.00A - 500.00A / Resolution : 8.0mA	±0.5ms Setting range : 7.50A - 750.00A / Resolution : 12mA	±0.1ms / ±0.5ms Setting range : 0.00A - 600.00A / Resolution : 9.6mA	±0.5ms Setting range : 9.00A - 900.00A / Resolution : 14.4mA
OCP ISTOP	Setting range : 0.64A - 400.00A / Resolution : 6.4mA Setting range : 0.19A - 200.00A /	Setting range : 0.96A - 600.00A / Resolution : 9.6mA Setting range : 0.28A - 300.00A /	Setting range : 0.80A - 500.00A / Resolution : 8.0mA Setting range : 0.24A - 250.00A /	Setting range : 1.20A - 750.00A / Resolution : 12mA Setting range : 0.36A - 375.00A /	Setting range : 0.96A - 600.00A / Resolution : 9.6mA Setting range : 0.28A - 300.00A /	Setting range : 1.44A - 900.00A / Resolution : 14.4mA Setting range : 0.43A - 450.00A /
OCP ITH Surge Test Mode Surge Comment	Resolution : 6.4mA	Resolution : 9.6mA	Resolution : 8.0mA	Resolution : 12mA	Resolution : 9.6mA	Resolution : 14.4mA
Surge Current Normal Current Surge Time	0 ~ 10 ~ 2	600A 300A 000ms	0 ~ 10 ~ 2	750A 375A 000ms	0~	900A 450A 000ms
Surge Step Batt test Mode Mode CC	1-5 1-5 Setting range : 0.00A - 400.00A / Resolution : 6.4mA Setting range : 0.00A - 500.00A / Resolution : 8.0mA					
Mode CP STOP Voltage(UVP) STOP TIME	Setting range: COOK - 4000 OW / Resolution: 0.000 - 4000 OW / Resolution: 3 atting range: 0.0000 - 4000 OW / Resolu					
STOP CAP.AH STOP CAP.WH SEQ Load Mode (remode only)	Setting range: OFF 1 - 99999K / KeSoultion: 1:5 Setting range: OFF 0.1 - 9999AH / Kesoultion: 0.1AH Setting range: OFF 0.1 - 19999WH / Resolution: 0.1WH					
Load mode Setting STEP Timing	CC / CP 2 - 16 20 - 1000 µs / 2 - 6535ms / 66 - 999sec					
Resolution Dynamic Mode				ms / lsec		
Timing Thigh & Tlow Resolution			0.001 / 0.0	9 / 999.9 / 9999ms / 0.1 / 1ms		
Accuracy Slew Rate Resolution Min. Rise Time	0.0256~1.600A / μs 0.0064A / μs	0.2560~16.000A / μs 0.064A / μs	0.0320~2.000A / μs 0.008A / μs	μs / 1ms + 50ppm 0.3200-20.000A / μs 0.08A / μs typical)	0.0384-2.400A / μs 0.0096A / μs	0.384024.000A / μs 0.096A / μs
Accuracy Current Range	0~40A	40 ~ 400A	±(5% of Se 0 ~ 50A	tting)±10μs 50 ~ 500A	0 ~ 60A	60 ~ 600A
Resolution Conf Key Parameter LDon Voltage	0.64mA	6.4mA	0.8mA Setting range : 0.25V - 6	8mA 2.50V / Resolution : 0.25V	0.96mA	9.6mA
LDoFF Voltage Average Time CV Res. Speed			0 -	250V / Resolution : 0.0025V - 64 Fastest)		
Measurement Voltage Read Back Range (5 Digital) Resolutior Accuracy	0 ~ 15V 0.25mV	15 ~ 150V 2.5mV	0 ~ 15V 0.25mV ± 0.025% of (R	15 ~ 150V 2.5mV eading + Range)	0 ~ 15V 0.25mV	15 ~ 150V 2.5mV
Current Read Back Range (5 Digital) Resolutior Accuracy	0 ~ 40A 0.64mA	40 ~ 400A 6.4mA	0 ~ 50A 0.8mA	50 ~ 500A 8mA ading + Range)	0 ~ 60A 0.96mA	60 ~ 600A 9.6mA
Power Read Back Range (5 Digital) Resolution Accurac ¹⁴	4	W	5	www. WW ading + Range)	6	XW
Accuracy General Typical Short Resistance Maximum Short Current	±.0.006 0f (Kealing = Kange) 1.8mΩ 1.5mΩ 1.2mΩ 400A 500A 600A					
Load ON Voltage Load OFF Voltage	0.25 ~ 62.5V 0 ~ 62.25V					
Power Consumption Dimension(H x W x D) Weight	550VA 177mm x 440mm x 745mm 28kg					
Temperature [®] Safety & EMC		0-40°C CE				

Note *1 : The power rating specifications at ambient temperature = 25 °C Note *2 : The range is automatically or forcing to range II only in CC mode Note *3 : If the operating current is below range 0.1%, the accuracy specification is 0.1% F.S. Note *4 : Power range = Vrange x Irange

Note *5 : Turbo mode for up to 1.5X Current rating & Power rating support Surge, Bms, Short /OCP /OPP test function Note *6 : The best accuracy of OCP /OPP test is Istep /Pstep=1%FS Note *7 : Bms Test function for Battery Management System Board SHORT, OCCP and OCDP Test Note *8 : Operating temperature range is 0–40°C, All specifications apply for 25°C±5°C, Except as noted

MODEL	PEL-50040	G-600-28 <u>0</u>	PEL-5005G	-600-350	PEL-5006G	-600-420
Power ^{°1} Current	0 ~ 4kW 0 ~ 280A	0 ~ 6kW max. *1 0 ~ 420A max. *1	0 ~ 5kW 0 ~ 350A	0 ~ 7.5kW max.*1 0 ~ 525A max.*1	0 ~ 6kW 0 ~ 420A	0 ~ 9kW max. *1 0 ~ 630A max. *1
oltage fin. Operating Voltage rotections	0 ~ 10V@	600V 0280A	0 ~ (10V@	00V 350A	0 ~ 10Vi	600V @420A
Over Power Protection(OPP) Over Current Protection(OCP) Over Voltage Protection(OVP)	105% 104% 105%					
ver Temp Protection(OTP) onstant Current Mode	0 ~ 28A	0 ~ 280A	90°C	±5°C 0 ~ 350A	0 ~ 42A	0 ~ 420A
ange ^{°2} esolution ccuracy ^{°3}	0~28A 0.448mA	0~ 280A 4.48mA	0.56mA ± 0.05% of (Se	5.6mA	0~42A 0.672mA	6.72mA
onstant Resistance Mode	128610Ω ~ 2.1435Ω	2.1435Ω ~ 0.0357Ω 35.73μΩ	102888Ω ~ 1.7148Ω 10 μS	1.7148Ω ~ 0.0285Ω 28.584μΩ	85740Ω ~ 1.4290Ω 12 μS	1.4290Ω ~ 0.0238Ω 23.82μΩ
esolution ccuracy onstant Voltage Mode	8 μS ± 0.1%(Vin / Setting)±0.1% IF.S.	± 0.1% of (Setting + Range)±0.1% IF.S	± 0.1%(Vin / Setting)±0.1% IF.S.	± 0.1% of (Setting + Range)±0.1% IF.S	± 0.1%(Vin / Setting) ±0.1% IF.S	± 0.1% of (Setting + Range) ±0.1% IF.
nge Isolution			0~(10)	mV		
curacy onstant Power Mode inge	0~400W	400 ~ 4kW	± 0.05% of (Se 0~500W	tting + Kange) 500~5kW	0~600W	600~6kW
solution curacy ³⁴	6.4mW	64mW	8mW ± 0.2% of (Se	80mW	9.6mW	96mW
enstant Voltage Mode + Current Limit M inge solution	600V 10mV	280A 4.48mA	600V 10mV	350A 5.6mA	600V 10mV	420A 6.72mA
ccuracy ^{°4} onstant Voltage Mode + Power Limit Mo	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range)	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range)	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range)
ange esolution	600V 10mV ± 0.05% of (Setting + Range)	4kW 64mW ± 1.0% of (Setting + Range)	600V 10mV ± 0.05% of (Setting + Range)	5kW 80mW ± 1.0% of (Setting + Range)	600V 10mV ± 0.05% of (Setting + Range)	6kW 96mW ± 1.0% of (Setting + Range)
ccuracy " urbo Mode " hort / OCP / OPP Test Function	OFF	E 1.0/8 OF (Setting + Kange)	OFF	E 1.0% of (Setting + Kange)	OFF	ON
lax. Current lax. Power	280A 4000W	420A 6000W	350A 5000W ± 1.0% of (Rea	525A 7500W	420A 6000W	630A 9000W
est Accuracy ⁵⁶ hort Time	100 ~ 10000ms Continuous	100 ~ 2000ms	100 ~ 10000ms Continuous	100 ~ 2000ms	100 ~ 10000ms Continuous	100 ~ 2000ms
etting. Accuracy nort V Hi		•	±5 Setting range : 0.00V - 60 Setting range : 0.00V - 60	0.00V / Resolution : 0.01V	•	·
hort V Lo ICP Time (Tstep) etting. Accuracy	100ms	20ms	100ms ±5	20ms	100ms	20ms
CP ISTAR / ISTEP / ISTOP	Setting range : 0.00A - 280.00A / Resolution : 4.48mA	Setting range : 0.00A - 420.00A / Resolution : 6.72mA	Setting range : 0.00A - 350.00A / Resolution : 5.6mA	Setting range : 0.00A - 525.00A / Resolution : 8.4mA	Setting range : 0.00A - 420.00A / Resolution : 6.72mA	Setting range : 0.00A - 630.00A / Resolution : 10.08mA
CP VTH PP Time(Tstep) etting. Accuracy	100ms	20ms	Setting range : 0.00V - 600 100ms ±5	.00V / Resolution : 0.01 V 20ms	100ms	20ms
PPP PSTAR / PSTEP / PSTOP	Setting range : 0.00W - 4000.0W / Resolution : 64.0mW	Setting range : 0.00W - 6000.0W / Resolution : 96.0mW	Setting range : 0.00W - 5000.0W / Resolution : 80.0mW	Setting range : 0.00W - 7500.0W / Resolution : 120mW	Setting range : 0.00W - 6000.0W / Resolution : 96mW	Setting range : 0.00W - 9000.0W / Resolution : 144mW
PP VTH MS Test Mode*7 Iax. Current	280A	420A	Setting range : 0.00V - 60 350A	525A	420A	630A
leas. Accuracy ⁶ hort test Time	2004	7200	±3.0% of (Rea 0.05ms~10ms / R	ding + Range) esolution : 0.01ms	42.00	0504
leas. Accuracy etting Accuracy	Setting range : 0.13A - 140.00A /	Setting range : 0.20A - 210.00A /	±0.0 ±0.0 Setting range : 0.16A - 175.00A /	2ms 5ms Setting range : 0.25A - 262.50A /	Setting range : 0.20A - 210.00A /	Setting range : 0.30A - 315.0 A /
hort ITH	Resolution : 4.48mA Setting range : 0.13A - 140.00A /	Resolution : 6.72mA Setting range : 0.67A - 420.00A /	Resolution : 5.6mA Setting range : 0.56A - 350.00A /	Resolution : 8.4mA Setting range : 0.84A - 525.00A /	Resolution : 6.72mA Setting range : 0.67A - 420.00A /	Resolution : 10.08mA Setting range : 1.00A - 630.00A /
CP ISTAR	Resolution : 4.48mA 0.05 ~ 10ms	Resolution : 6.72mA 0.05 ~ 10ms	Resolution : 5.6mA 0.05 ~ 10ms	Resolution : 8.4mA 0.05 ~ 10ms	Resolution : 6.72mA 0.05 ~ 10ms	Resolution : 10.08mA 0.05 - 10ms
feas. Accuracy	11 ~ 1000ms ±0.1ms / ±0.5ms Setting range : 0.00A ~ 280.00A /	±0.5ms Setting range : 4.20A - 420.00A /	11 ~ 1000ms ±0.1ms / ±0.5ms Setting range : 0.00A - 350.00A /	±0.5ms Setting range : 5.25A - 525.00A /	11 ~ 1000ms ±0.1ms / ±0.5ms Setting range : 0.00A - 420.00A /	±0.5ms Setting range : 6.30A - 630.00A /
	Resolution : 4.48mA Setting range : 0.44A - 280.00A /	Resolution : 6.72mA Setting range : 0.67A - 420.00A /	Resolution : 5.6mA Setting range : 0.56A - 350.00A /	Resolution : 8.4mA Setting range : 0.84A - 525.00A /	Resolution : 6.72mA Setting range : 0.67A - 420.00A /	Resolution : 10.08mA Setting range : 1.00A - 630.00A /
CP ITH	Resolution : 4.48mA Setting range : 0.13A - 140.00A / Resolution : 4.48mA	Resolution : 6.72mA Setting range : 0.20A - 210.00A / Resolution : 6.72mA	Resolution : 5.6mA Setting range : 0.16A - 175.00A / Resolution : 5.6mA	Resolution : 8.4mA Setting range : 0.25A - 262.50A / Resolution : 8.4mA	Resolution : 6.72mA Setting range : 0.20A - 210.00A / Resolution : 6.72mA	Resolution : 10.08mA Setting range : 0.30A - 315.00A / Resolution : 10.08mA
urge Test Mode urge Current	0~	420A	0~!	525A	0~	630A
lormal Current urge Time urge Step	10 ~ 2	210A 000ms ~ 5	0~2 10~2	000ms	10~	315A 2000ms ~ 5
att test Mode Iode CC		.00A / Resolution : 4.48mA		0.00A / Resolution : 5.6mA	Setting range : 0.00A - 42	0.00A / Resolution : 6.72mA
tode CP TOP Voltage (UVP) TOP TIME	Setting range : 0.00W - 4000.0W / Resolution : 64.0mW Setting range : 0.00W - 5000.0W / Resolution : 80.0mW Setting range : 0.00W - 6000.0W / Resolution : 96mW Setting range : 0.00W - 6000.0W / Resolution : 96mW Setting range : 0.00V - 6000.0W / Resolution : 001V Setting range : 0.01V					
TOP CAP.AH TOP CAP.WH			Setting range : OFF 0.1 - 19 Setting range : OFF 0.1 - 19	999AH / Resolution : 0.1AH		
EQ Load Mode (remode only) oad Mode etting STEP	-			/ CP		
iming tesolution	2 ~ 16 20 ~ 1000 µs / 2~ 6535ms / 66 ~ 999sec 10 µs / Ims / Ise					
<mark>ynamic Mode</mark> iming high & Tlow	-		0.010~9.999 / 99.9	9 / 999.9 / 9999ms		
esolution ccuracy		-	0.001 / 0.01 1 μs / 10 μs / 100	/0.1 / 1ms μs / 1ms + 50ppm	-	-
lew Rate esolution 1in. Rise Time	0.01792~1.120A / μs 0.00448A / μs	0.1792~11.200A / μs 0.0448A / μs	0.0224~1.400A / μs 0.0056A / μs 25 μs(t	0.2240~14.00A / µs 0.056A / µs vpical)	0.02688~1.680A / μs 0.00672A / μs	0.2688~16.800A / µs 0.0672A / µs
ccuracy urrent	0	20. 700	±(5% of Set	ting)±10 μs	0	1 10 100
ange esolution onf Key Parameter	0 ~ 28A 0.45mA	28 ~ 280A 4.48mA	0 ~ 35A 0.56mA	35 ~ 350A 5.6mA	0 ~ 42A 0.67mA	42 ~ 420A 6.72mA
Don Voltage DoFF Voltage			Setting range : 0.4V - 10 Setting range : 0.000V - 9	9.60V / Resolution : 0. 01V		
werage Time IV Res. Speed Aeasurement	<u> </u>		0 ~ 1 ~ 4 (f	64 astest)		
oltage Read Back Range (5 Digital) Resolution	0 ~ 60V 1.00mV	60~ 600V 10.0mV	0 ~ 60V 1.00mV	60 ~ 600V 10.0mV	0 ~ 60V 1.00mV	60 ~ 600V 10.0mV
Accuracy urrent Read Back Range (5 Digital) Resolution	0 ~ 28A 0.448mA	28 ~ 280A 4.48mA	± 0.025% of (Re 0 ~ 35A 0.56mA	35 - 350A 5.6mA	0 ~ 42A 0.672mA	42 ~ 420A 6.72mA
Accuracy ower Read Back Range (5 Digital)	4	(W	± 0.05% of (Re 5k	W	•	kW
Resolution Accuracy ⁶⁴ General			± 0.06% of (Re			
ypical Short Resistance 1aximum Short Current		3mΩ 0A	35			82mΩ 20A
oad ON Voltage oad OFF Voltage ower Consumption	0.4~100V 0~99.6V 550VA					
Dimension(H x W x D) Veight	177mm x 440mm x 745mm 29kg 0 ~ 40℃					
emperature ^{"8} afety & EMC				40°C E		

Note *1 : The power rating specifications at ambient temperature = 25 °C Note *2 : The range is automatically or forcing to range II only in CC mode Note *3 : If the operating current is below range 0.3%, the accuracy specification is 0.1% F.S. Note *4 : Power range = Vrange x Irange

Note *5 : Turbo mode for up to 1.5X Current rating & Power rating support Surge, Bms, Short /OCP /OPP test function Note *6 : The best accuracy of OCP /OPP test is Istep /Pstep=1%FS Note *7 : Bms Test function for Battery Management System Board SHORT, OCCP and OCDP Test Note *8 : Operating temperature range is 0-40°C, All specifications apply for 25°C±5°C, Except as noted

	MODEL	PEL-5004G-1200-160 PEL-5005G-1200-		G-1200-200			
Line Marked from the set of the	Power ^{°1} Current Voltage	0 ~ 160A	0 ~ 240A max.*1	0 ~ 200A	0 ~ 300A max.*1	0 ~ 240A	0 ~ 360A max.*1
	Min. Operating Voltage Protections	15V@100A 15V@240A 15V@240A					
Sinter series Sinter set is a set is set is a set i	Over Current Protection(OCP)	104%					
dag	Over Temp Protection(OTP) Constant Current Mode						
And a local of a	Range ⁷² Resolution			0.32mA	3.2mA		
nime transmissionnot be a first set of the set	Accuracy Constant Resistance Mode Range	450kΩ ~ 7.5Ω	7.5Ω ~ 0.0937Ω			300kΩ ~ 5Ω	5Ω ~ 0.0625Ω
Marked BarreerControlControlWarreerControlControlControlControlControlWarreerControlControlControlControlControlControlWarreerControlControlControlControlControlControlControlWarreerControlControlControlControlControlControlControlWarreerControlControlControlControlControlControlControlWarreerControlControlControlControlControlControlControlWarreerControlControlControlControlControlControlControlWarreerControlControlControlControlControlControlControlControlWarreerControlControlControlControlControlControlControlControlControlWarreerControl </td <td>Resolution Accuracy</td> <td>2.2 µS</td> <td>125μΩ</td> <td>2.8 µS</td> <td>100μΩ</td> <td>3.3 µS</td> <td></td>	Resolution Accuracy	2.2 µS	125μΩ	2.8 µS	100μΩ	3.3 µS	
Sint of the second s	lange						
adminy market with resultCarlor and the state of	Accuracy Constant Power Mode			± 0.05% of (Se	etting + Range)		
Description Description <thdescription< th=""> <thdescription< th=""></thdescription<></thdescription<>	Resolution			8mW	80mW		
	couracy Constant Voltage Mode + Current Limit Mo Range		160A	ч. Ч		1200V	240A
Res DescriptionNo Los of the log	ccuracy ^{*4}	± 0.05% of (Setting + Range)	2.56mA ± 1.0% of (Setting + Range)	20mV ± 0.05% of (Setting + Range)		20mV ± 0.05% of (Setting + Range)	
and and an and a set of a set	lange	1200V					
Del Control Del Control <thdel contro<="" th=""> <thdel control<="" th=""></thdel></thdel>	ccuracy ³⁴	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range)	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range)	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range)
Adama 2 IDE / Produce for Control IDE / Produce for C	hort / OCP / OPP Test Function Max. Current	160A	240A	200A	300A	240A	360A
Differ Data and the control of the second seco	Max. Power Test Accuracy ⁶⁶			± 1.0% of (Rea	ading + Range)	•	
The starting with the starting of	hort Time ietting. Accuracy		100 ~ 2000ms	Continuous ±5	ms		100 ~ 2000ms
	ihort V Hi ihort V Lo	100	20	Setting range : 0.000V - 12	200.0V / Resolution : 0.02V	100	20
ProblemRegionReg	etting. Accuracy			±5	ms	•	
	DCP ISTAR / ISTEP / ISTOP DCP VTH	Resolution : 2.56mA	Resolution : 3.84mA	Resolution : 3.2mA Setting range : 0.00V - 120	Resolution : 4.8mA 0.00V / Resolution : 0.02V	Resolution : 3.84mA	Resolution : 5.76mA
$ \begin{array}{c c c c c } \ Produce Pro$	DPP Time(Tstep) Setting. Accuracy		•	100ms ±5	20ms ms	•	•
	OPP PSTAR / PSTEP / PSTOP			Resolution : 80.0mW	Resolution : 120mW		
at vala final series and a series of the s	IMS Test Mode*7 Max. Current	160A	240A	200A	300A	240A	360A
International biology of the section of the	Meas. Accuracy ⁶ hort test Time			0.05ms~10ms / R	esolution : 0.01ms		
Minim Secolate : 34 end Becalate : 34 end Becal	Setting Accuracy	Setting range : 0.07A - 80.00A /	Setting range : 0 11A - 120 00A /	±0.0	15ms	Setting range : 0 11A - 120 00A /	Setting range : 0 17A - 180 00A /
$\begin{array}{ $	Short ITH	Resolution : 2.56mA	Resolution : 3.84mA	Resolution : 3.2mA	Resolution : 4.8mA	Resolution : 3.84mA	Resolution : 5.76mA
sin Along it is a ban y along an along an along an along an along alon	OCP TSTEP	0.05 ~ 10ms		0.05 ~ 10ms		0.05 ~ 10ms	
Part Div Resultant : 3 tend, Bencham: 4 tend, Bench	Meas. Accuracy	±0.1ms / ±0.5ms		±0.1ms / ±0.5ms		±0.1ms / ±0.5ms	
Spin Pri Ma Same pringe (0.04.700.04) Becaluses 1.3 And Sections 2.5 And Becaluses 1.3 And Becalus		Resolution : 2.56mA	Resolution : 3.84mA	Resolution : 3.2mA	Resolution : 4.8mA	Resolution : 3.84mA	Resolution : 5.76mA
Tay Lett Made RESOLUTE 1.2 MAR RESOLUTE 1.2 MAR <td>DCP ITH</td> <td>Setting range : 0.07A - 80.00A /</td> <td>Setting range : 0.11A - 120.00A /</td> <td>Setting range : 0.09A - 100.00A /</td> <td>Setting range : 0.14A - 150.00A /</td> <td>Setting range : 0.11A - 120.00A /</td> <td>Setting range : 0.17A - 180.00A /</td>	DCP ITH	Setting range : 0.07A - 80.00A /	Setting range : 0.11A - 120.00A /	Setting range : 0.09A - 100.00A /	Setting range : 0.14A - 150.00A /	Setting range : 0.11A - 120.00A /	Setting range : 0.17A - 180.00A /
Simul Corrent. 0-130A 0-130A 0-180A 1-2 0.102A 0.102A 0.102A 0.102A 1 to a Unit 1-3 1-3 1-3 1-3 1-3 1 to a Unit 1-3 1-3 1-3 1-3 1-3 1 to a Unit 1-3 1	urge Test Mode						
Bit Bit Mode Setting range: 0.000.1160.00/ Resolution: 2.56m/ Setting range: 0.000.200.00/ Resolution: 2.56m/ 00 Construction Setting range: 0.000.1160.00/ Resolution: 2.56m/ Setting range: 0.000.200.00/ Resolution: 3.56m/ 00 Construction Setting range: 0.000.1160.00/ Resolution: 2.56m/ Setting range: 0.000.200.00/ Resolution: 3.56m/ 00 Construction Setting range: 0.000.1160.00/ Resolution: 2.56m/ Setting range: 0.000.200.00/ Resolution: 3.56m/ 00 Construction Setting range: 0.000.1160.00/ Resolution: 2.56m/ Setting range: 0.000.200.00/ Resolution: 3.56m/ 00 Construction Setting range: 0.000.200.00/ Resolution: 1.56m/ Setting range: 0.000.200.00/ Resolution: 1.56m/ 00 Construction Setting range: 0.000.200.00/ Resolution: 1.56m/ Setting range: 0.000.200.00/ Resolution: 1.56m/ 00 Construction Setting range: 0.000.200.00/ Resolution: 1.56m/ Setting range: 0.000.200.00/ Resolution: 1.56m/ 00 Construction Setting range: 0.000.200.00/ Resolution: 1.56m/ Setting range: 0.000.200.00/ Resolution: 1.56m/ 00 Construction Setting range: 0.000.200.00/ Resolution: 1.56m/ Setting range: 0.000.200.00/ Resolution: 1.56m/ 00 Construction Setting range: 0.000.200.00/ Resolution: 1.56m/ Setting range: 0.000.200.00/ Resolution: 1.56m/ 00 Setting range: 0	Normal Current Surge Time	0 ~ 10 ~ 2	120A 000ms	0~ 10~2	150A 000ms	0 ~ 10 ~ 2	180A 2000ms
Setting range: 0.00% - 400.00% / Resolution: 46.0m% Setting range: 0.00% - 500.00% / Resolution: 30.0m% Setting range: 0.00% - 600.00% / Resolution: 30.0m% OP CAR WIT Setting range: 0.00% - 500.00% / Resolution: 10.0M Setting range: 0.0% - 500.00% / Resolution: 10.0M OP CAR WIT Setting range: 0.0% - 500.00% / Resolution: 10.0M Setting range: 0.0% - 500.00% / Resolution: 10.0M OP CAR WIT Setting range: 0.0% - 500.00% / Resolution: 10.0M Setting range: 0.0% - 500.00% / Resolution: 10.0M OP CAR WIT Setting range: 0.0% - 500.00% / Resolution: 10.0M Setting range: 0.0% - 500.00% OP CAR WIT Setting range: 0.0% - 500.00% / Resolution: 10.0M Setting range: 0.0% - 500.00% OP CAR WIT Setting range: 0.0% - 500.00% Resolution: 10.0M Setting range: 0.0% - 500.00% Resolution: 10.0% Setting range: 0.0% - 500.0% Setting range: 0.0% - 500.0% Resolution: 10.0% Setting range: 0.0% - 500.0% Setting range: 0.0% - 500.0% Resolution: 10.0% Setting range: 0.0% - 500.0% Setting range: 0.0% - 500.0% Resolution: 10.0% Setting range: 0.0% - 500.0% Setting range: 0.0% - 500.0% Resolution: 10.0% Resolution: 10.0% Setting range: 0.0% - 500.0% Resolution: 10.0% R	att test Mode	· · · · · · · · · · · · · · · · · · ·		· · · · · ·		· · · · ·	
OP TUBE Setting range: OF 7 1 - 99999/ [Resolution: 1.1s OP CAV MH Setting range: OF 7 1 - 199999/ [Resolution: 2.10M + OP CAV MH Setting range: OF 7 1 - 199999/ [Resolution: 2.10M + OP CAV MH Setting range: OF 7 1 - 199999/ [Resolution: 2.10M + OP CAV MH Setting range: OF 7 1 - 99999/ [Resolution: 2.10M + Setting range: OF 7 1 - 99999/ [Resolution: 2.10M + Setting range: OF 7 1 - 99999/ [Resolution: 2.10M + Setting range: OF 7 1 - 99999/ [Resolution: 2.10M + Setting range: OF 7 1 - 99999/ [Resolution: 2.10M + Setting range: OF 7 1 - 99999/ [Resolution: 2.10M + Setting range: OF 7 1 - 99999/ [Resolution: 2.10M + Setting range: OF 7 1 - 99999/ [Resolution: 2.10M + Setting range: OF 7 1 - 99999/ [Resolution: 2.10M + Setting range: OF 7 1 - 99999/ [Resolution: 1.10M + Setting range: OF 7 1 - 99999/ [Resolution: 1.10M + Setting range: OF 7 1 - 99999/ [Resolution: 1.10M + Setting range: OF 7 1 - 99999/ [Resolution: 1.10M + Setting range: OF 7 1 - 9999/ [Resolution: 1.10M + Setting range: OF 7 1 - 99999/ [Resolution: 1.10M + Setting range: OF 7 1 - 9999/ [Resolution: 1.10M + O 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 - 9500 / 10 - 0.1554 -	Aode CP	Setting range : 0.00W - 4000.0W / Resolution : 64.0mW Setting range : 0.00W - 5000.0W / Resolution : 80.0mW Setting range : 0.00W - 6000.0W / Resolution : 96mW					
C/ CP	TOP TIME TOP CAP.AH	Setting range: OFF 1 - 99999A / Resolution: 1's Setting range: OFF 01 - 1999AH / Resolution: 0.1AH					
Time 2-16 solution 20-100 μ/ Jcs - 5553 m/ Jcs mine Mode 10 μ / Jmr / Jsc mine Mode 0.010-5999 / 999 / 999 m/s solution 0.010-5999 / 999 / 999 m/s solution 0.010-2999 / 999 / 999 m/s solution 0.01024 - 0.640A / μs 0.0124 - 6.400A / μs 0.0135 - 0.500A / μs 0.0136 - 0.500A / μs 0.016 - 0.500A / ms 0.016 - 0.500	EQ Load Mode (remode only)						
manic Mode 0.000-5-999 / 990 / 200 / 20 / 100 / 150 / 150 / 900 / 0032 / µs / 000 /	Setting STEP Fiming			2 ~ 20 ~ 1000 μs / 2~ 65	- 16 535ms / 66 ~ 999sec		
light & Tow 0.010-3999 (9999 (9999 (9999 f) 599) curacy 0.001 (0.1 / Ims + 50pp write 0.01024 - 0.640A / µs 0.0124 - 0.640A / µs 0.0128 - 400A / µs 0.0135 - 0.960A / µs 0.033A / µs 0.03A / µs	tesolution Dynamic Mode			10 µs / 1	ms / 1sec		
curacy Image and set	Iming high & Tlow tesolution						
In. Rise Time	ccuracy lew Rate	0.01024 ~ 0.640A / µs	0.1024 ~ 6.400A / μs	0.0128~0.800A / µs	0.1280~8.000A / μs		0.1536~9.600A / µs
Immedia <	esolution Ain. Rise Time	0.00256A / µs	0.0256A / µs	25 μs(typical)	0.00384A / µs	0.0384A / μs
solution 0.02mA 0.32mA 0.32mA 0.33mA 3.34mA if Mg Paramet Setting range: 1V - 250 V/ Resolution : 1V Setting range: 1V - 250 V/ Resolution : 10 V or Voltage Setting range: 10 - 200 V/ Resolution : 00V 200 V/ Resolution : 10 V erage Time 0 - 64 -<	Current lange			0 ~ 20A	20 ~ 200A		
oper F only age Setting range : 0.00V - 249 0V / Resolution : 0.02V reage Time 0 ~ 64 O ~ 64 reage Time 0 ~ 64 O ~ 64 reage Time 0 ~ 64 O ~ 64 reage Time 0 ~ 64 O ~ 64 O ~ 64 reage Time 0 ~ 64 O ~ 64 O ~ 120V O ~ 120V O ~ 120V I 20 ~ 1200V ltage Read Back Range (5 Digita) O ~ 120V I 20 ~ 1200V O ~ 120V I 20 ~ 1200V I 20 ~ 1200V reage Time Read Back Range (5 Digita) O ~ 120V I 20 ~ 1200V O ~ 120V I 20 ~ 120V I 20 ~ 120V reage Read Back Range (5 Digita) O ~ 164 I - 200V I 20 ~ 200A O ~ 24A I 24 ~ 240A Resolution O . 206M I 20 ~ 200A O ~ 24A I 24 ~ 240A Resolution O . 206M I 20 ~ 200A O . 24A I 38 mA reage Time Read Back Range (5 Digita) O ~ 16A I 20 ~ 200A O . 24A I 38 mA reage Time Read Back Range (5 Digita) O ~ 16A I 20 ~ 50W I 20 ~ 50W I 20 ~ 50W reage Time Time Time Time Time Time Time Tim	tesolution Conf Key Parameter	0.26mA	2.56mA		•	0.38mA	3.84mA
Image Res Sped	DoFF Voltage			Setting range : 0.000V - 2	49.0V / Resolution : 0.02V		
Resolution $2.00mV$ $020A$ $024A$ $2.4-240A$	V Res. Speed Aeasurement			1 ~ 4 (l	Fastest)		
Immeria Back Range (5 Digital) 0 - 16A 16 - 160A 0 - 20A 0 - 20A 0 - 24A 24 - 240A Resolution 0.256mA 0.32mA 0.32mA 0.33mA 0.334mA 0.334mA 0.334mA Accuracy ± 0.05% of (Reading + Range) ± 0.05% of (Reading + Range) 6kW Resolution 0.01W 6kW Accuracy 0.01W 6kW Accuracy 0.375mΩ 6kW Accuracy 0.01W 6k2.050mΩ Accuracy 0.02K 240A Accuracy 0.02K 240A Accuracy 0.02K 240A Accuracy 0.02K 240A Accuracy 0.02K 240A <tr< td=""><td>Resolution</td><td></td><td></td><td>2.00mV</td><td>20.0mV</td><td></td><td></td></tr<>	Resolution			2.00mV	20.0mV		
wer Reade (k Pange (5) big(tai) 6 kW Resolution 6 kW Accuracy "4 0.01W Accuracy "4 0.01W Accuracy "4 0.01W Big Shot Resistance 0.249V Wer Consumption 0.01W 0.249V Big Shot Resistance 29kg Big Shot Resistance 0.40%C	Current Read Back Range (5 Digital) Resolution			0 ~ 20A 0.32mA	20 ~ 200A 3.2mA		
Accuracy ⁷⁴ ± 0.06% of (Reading + Range) ment ± 0.06% of (Reading + Range) ineral 5 jcal Short Resistance 93.75mΩ 75mΩ 62.505mΩ aximum Short Current 160A 200A 240A ad OF Voltage 0 - 250V 3 3 ad OF Voltage 0 - 249V 3<	Power Read Back Range (5 Digital)	4	kW	51	(W	6	kW
pical Shor Resistance 93.75ml 75ml 62.505ml ad ON Voltage 100A 200A 240A ad ON Voltage 1 - 250V 240A ad ON Voltage 0 - 249V 240A wer Consumption 0 - 249V - mension(H & W c D) - - eight - - 92 Ng - -	Accuracy ^{°4}						
ad OFF Voltage 0 - 249V wer Consumption 550VA mersion(H ± Vx D) 177mm x 440mm x 745mm bight 2%g mperature % 0 - 40°C	ypical Short Resistance Aaximum Short Current			20	0A		
mension(H x W x D) 177mm x 440mm x 745mm sight 29kg meperture 5 0 - 40°C	.oad ON Voltage .oad OFF Voltage Power Consumption	0~249V					
mperature ³⁶ 0 ~ 40°C	ower Consumption Dimension(H x W x D) Weight			177mm x 440 29	imm x 745mm Ikg		
	Temperature [®] Safety & EMC						

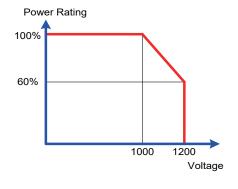
Note *1 : The power rating specifications at ambient temperature = 25 °C Note *2 : The range is automatically or forcing to range II only in CC mode Note *3 : If the operating current is below range 0.1%, the accuracy specification is 0.1% F.S. Note *4 : Power range = Vrange x Irange

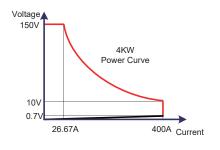
Note *5 : Turbo mode for up to 1.5X Current rating & Power rating support Surge, Bms, Short /OCP /OPP test function Note *6 : The best accuracy of OCP /OPP test is Istep /Pstep=1%FS Note *7 : Bms Test function for Battery Management System Board SHORT, OCCP and OCDP Test Note *8 : Operating temperature range is 0-40°C, All specifications apply for 25°C±5°C, Except as noted

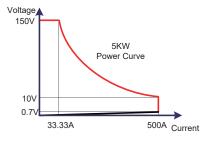
Power Rating 100% (6kW) 83% (5000W) 0 10 20 30 40 °C 6kW Only

Power Curve







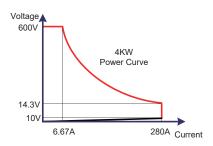


Voltage 150V 6KW Power Curve 10V 0.7V 40A 600A Current

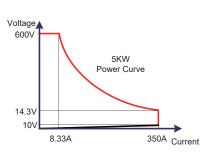
PEL-5004G-150-400

PEL-5005G-150-500

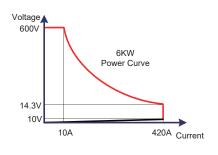
PEL-5006G-150-600





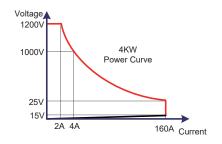


PEL-5005G-600-350

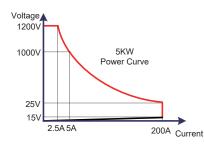


PEL-5006G-600-420

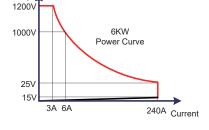
Voltage





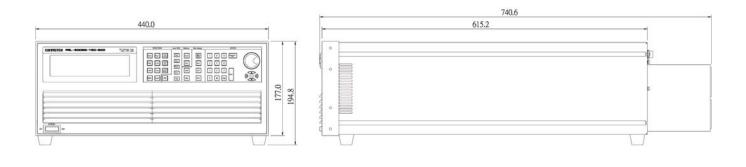


PEL-5005G-1200-200



PEL-5006G-1200-240

EXTERNAL DIMENSIONS





ORDERING INFORMATION

PEL-5005G-150-500 150V/500A/5000 PEL-5006G-150-600 150V/600A/6000 PEL-5004G-600-280 600V/280A/4000 PEL-5005G-600-350 600V/350A/5000 PEL-5006G-600-420 600V/420A/6000 PEL-5004G-1200-160 1200V/160A/400 PEL-5005G-1200-200 1200V/200A/500	 W High Power DC Electronic Load 0W High Power DC Electronic Load 	
PEL-5006G-1200-240 Powerrating: 6-> 64kW Maximum output current 240+> 240A Maximum output voltage: 1200-> 1200V	STANDARD ACCESSORIES PEL-5000G Series operation manual BANANA PLUGS : Please refer to Fig.1 x 1 BNC – BNC CABLE : BNC to BNC CABLE, 1m x 1 HD-DSUB : 15PIN Parallel wire Parallel Wire x 1 PEL-028 HANDLES, U-shaped Handle (fixed to the bracket) PEL-031 Rack Mount Kit For PEL-5000G	

OPTIONAL ACCESSORIES

PEL-022	GPIB Card	PEL-025	USB Card	GTL-246	USB Cable, USB 2.0, A-B Type, 1200mm
PEL-023	RS-232 Card	PEL-030	GPIB+RS-232 Card	GTL-248	GPIB Cable, Double Shielded, 2000mm
PEL-024	LAN Card	PEL-032	9923 Current Waveform Generator + RS232 Interface	GTL-250	GPIB Cable, Double Shielded, 600mm

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



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Mess- und Prüftechnik. Die Experten.