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Programmable DC Electronic Load



Product No : TPL150W

Product Description

TPL-8611C2 and TPL-8610C are high performance programmable DC electronic load. Four basic functions and nine basic operation modes provides sufficient solutions wherever power sources need to be tested. Especially unique CPV and CPC modes greatly improved the functionality of constant power operation. The strong List Mode function, with Min. step 10ms and Max. step 99999s, allows users to set numbers of cycles at free and to link to other lists, facilitating complicated tests. Equipped with RS-232 interface for PC control, SCPI commands and Labview development platform, the TPL series is designed to provide high reliability, great performance and easy operation in research and production of aerospace, ship building, auto electronics, solar battery, fuel cell, etc.

- ★ 4 basic functions: CC, CV, CR, CP
- ★ 9 basic operation modes: CCL, CCH, CVL, CVH, CRL, CRM, CRH, CPV, CPC
- ★ 24-bit A/D converter and 16-bit D/A converter, 40kHz D/A conversion speed, high resolution & high speed
- ★ Hardware circuit for CR function, faster transient response and higher CR accuracy
- ★ Over load, over voltage, over current, over temperature and reverse voltage protections
- ★ High speed transient test function, max. test frequency 2kHz
- ★ List Mode function, Min. step 10ms, Max. step 99999s, free to set numbers of cycles, to be linked to other lists
- ★ Auxiliary function: short circuit test, battery discharge capacity test
- ★ Intelligent cooling system, ensure high stability during long-time operation under full load
- ★ Auto ON/OFF function
- ★ Rotary dial and digital keypad input
- ★ Save & recall function for frequently used setups
- ★ Standard RS-232 interface, optional USB interface
- ★ Support SCPI commands, support Labview

Model	8610C	8611C2
Rated input (0°C~40°C)		
Voltage	0~150V	0~150V
Current	1mA~20A	1mA~30A
Power	150W	150W
MOV@FS current	1.0V	1.5V
Constant voltage mode (CV)		
Low range	0.1~30V	0.1~30V
Resolution	1mV	1mV
Accuracy	±(0.05%+0.02%FS)	±(0.05%+0.02%FS)
High range	0.1~150V	0.1~150V
Resolution	10mV	10mV
Accuracy	±(0.05%+0.025%FS)	±(0.05%+0.025%FS)
Constant current mode (CC)		
Low range	0~2A	0~3A
Resolution	1mA	1mA
Accuracy	±(0.1%+0.1%FS)	±(0.1%+0.1%FS)
High range	0~20A	0~30A
Resolution	10mA	10mA
Accuracy	±(0.1%+0.15%FS)	±(0.1%+0.15%FS)
Constant resistance mode (CR) (Input voltage /current≥10%FS)		
Low range (VH CRL)	≈0.06 ~ 9Ω	≈0.06 ~ 6Ω
Resolution	150uΩ	100uΩ
Accuracy (Impedance)	±(1%+0.5%FS)	±(1%+0.5%FS)
Middle range (VH CRM)	≈9 ~ 900Ω	≈6 ~ 600Ω
Resolution	1.8us	2.7us
Accuracy (Conductance)	±(1%+0.5%FS)	±(1%+0.5%FS)
High range (VH CRH)	≈90 ~ 4000Ω	≈60 ~ 4000Ω
Resolution	0.20us	0.30us
Accuracy (Conductance)	±(5%+5%FS)	±(5%+5%FS)
Low range (VL CRL)	≈0.06 ~ 1.8Ω	≈0.06 ~ 1.12Ω

Resolution		29uΩ	18uΩ
Accuracy (Impedance)		±(1%+0.5%FS)	±(1%+0.5%FS)
Medium range (VL CRM)		≈1.8 ~ 180Ω	≈1.12 ~ 112Ω
Resolution		9.0us	15us
Accuracy (Conductance)		±(5%+2.5%FS)	±(5%+2.5%FS)
High range (VL CRH)		≈18 ~ 2000Ω	≈11.2 ~ 2000Ω
Resolution		1.0us	1.6us
Accuracy (Conductance)		±(5%+2.5%FS)	±(5%+2.5%FS)
Constant power mode (CP) (Input voltage /current≥10%FS)			
Range		0~150W	0~150W
Resolution	P<100W	1mW	1mW
	P≥100W	10mW	10mW
Accuracy		±(1%+0.1%FS)	±(1%+0.1%FS)
Rated input (0°C~40°C)			
Voltage		0~150V	0~150V
Current		1mA~20A	1mA~30A
Power		150W	150W
Voltage measurement			
Low range		0~30V	0~30V
Resolution		1mV	1mV
Accuracy		±(0.05%+0.02%FS)	±(0.05%+0.02%FS)
High range		0~150V	0~150V
Resolution		10mV	10mV
Accuracy		±(0.05%+0.025%FS)	±(0.05%+0.025%FS)
Current measurement			
Low range		0~2A	0~3A
Resolution		1mA	1mA
Accuracy		±(0.1%+0.1%FS)	±(0.1%+0.1%FS)
High range		0~20A	0~30A
Resolution		1mA	1mA
Accuracy		±(0.1%+0.15%FS)	±(0.1%+0.15%FS)
Power measurement (Input voltage /current≥10%FS)			
Range		0~150W	0~150W

Resolution	P<100W	1mW	1mW
	P≥100W	100mW	10mW
Accuracy		±(1%+0.1%FS)	±(1%+0.1%FS)
Current slew rate			
Range	CCH (/us)	0.1mA ~1.0A	0.1mA ~1.5A
	CCL (/us)	0.1mA ~0.1A	0.1mA ~0.15A
Resolution		0.1mA/us	0.1mA/us
Accuracy		3%+10us	3%+10us
Battery discharge			
Discharge time		1s~100h	1s~100h
Resolution		1s	1s
Accuracy		0.2%+1s	0.2%+1s
Battery capacity		2000Ah	3000Ah
Resolution		1mAh	1mAh
Accuracy		0.3%+0.01Ah	0.3%+0.01Ah
Discharge range	voltage	0.1V~150V	0.1V~150V
Discharge resolution	current	10mA	10mA
Short circuit			
CCL		2.4A	3.6A
CCH		22A	33A
CV		0V	0V
VH CRL		0.047Ω	0.044Ω
VH CRM		8.5Ω	5.6Ω
VH CRH		89Ω	58Ω
VL CRL		0.049Ω	0.044Ω
VL CRM		1.6Ω	1.1Ω
VL CRH		16Ω	10Ω
CPV		165W	165W
CPC		0W	0W
Rated input (0°C~40°C)			
Voltage		0~150V	0~150V
Current		1mA~20A	1mA~30A
Power		150W	150W

Max. slew rate		
Current	1.0A /us	1.5A /us
Voltage	0.2V/us	0.2V/us
Open circuit	≥20kΩ	≥20kΩ
Max. input level		
Current	22A	33A
Voltage	175V	175V
Ripple&Noise		
Current (rms/p-p)	3mA/30mA	3mA/30mA
Voltage (rms)	5mV	5mV
Transient operation		
Transient mode	Continuous, Pulse, Toggled	
Frequency range	0.01Hz~2kHz	
High/Low time	0~99999ms	
Resolution	250us	
Accuracy	0.2%+10us	
Rising/Falling time	250us~99999ms	
Resolution	250us	
Accuracy	0.2%+10us	
List Mode		
Step time	10ms~99999s	
Resolution	10ms	
Accuracy	0.2%+10us	
No. of step	1~50	
Cycle	0~65535	
Storage	8Lists	
Expanded function	Chain	
Trigger input		
Trigger level	TTLfalling edge	
Trigger pulse width	≥20us	
General		
Protection	Over current, over voltage, over power, over temperature and reverse polarity protections	
Programming interface	USB or RS-232 interface, support SCPI commands, support Labview	
Operating environment	0°C~40°C, ≤85%RH	

Storage environment	-10°C~70°C, ≤70%RH	
Power source	AC110V/220V±10% selectable, 50/60Hz	
Accessories	Power cord x1, Operation manual x1, RS-232 cable x1	
Dimension	215x89x412mm	215x89x412mm
Weight	5.2kg	5.2kg

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