

Full-Load Current of 100 A at 0.3 V!

High Speed-Large Current DC Electronic Load (50 A/ μ s)

While the PLZ-4WL series succeeds to the superior operability of our conventional model of the PLZ-4W series, the PLZ-4WL series realizes the high speed rise and fall time (slew rate of 50 A/ μ s.) in the range of low voltage with large current. The PLZ-4WL offers six operation modes, and equips with various features such as sequence operation, switching operation, soft-start function, and time and voltage measurement. The PLZ-4WL applies not only for the conventional load test of the CPU power supply, but also it can be applied to even faster current response test. In addition, the PLZ-4WL is a space-saving design (about 50 % less volume of the conventional model) that can save the facility space of the testing site, and it can be applied for the single cell testing of the large scale rechargeable battery.

Electronic Load PLZ-4WL series

Lineup

Model	Operation voltage	Current	Power
PLZ164WL	0.3 V to 30 V	50 A	165 W
PLZ334WL		100 A	330 W

Interface USB, GPIB, and RS232C are equipped as standard.

Applications

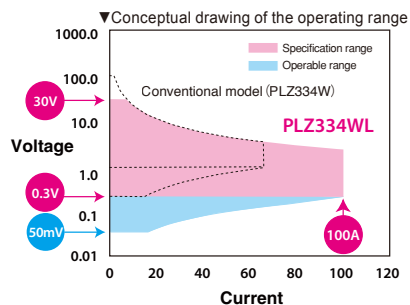
- Test for the Low Voltage Power Supply of the CPU
- Discharge test for the large current rechargeable battery
- IV characteristic test of the solar battery
- Impedance test for the various type of rechargeable batteries, power supplies
- Test for the relays, switches
- Absorbing the surge of brushless motor
- Test for the prearcing time-current characteristic



Feature/Function

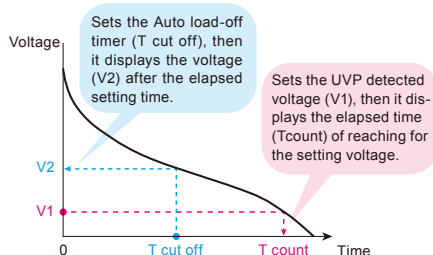
Realizing the low voltage operation

Possible to operate as low as 50 mV by the input voltage. Even below the input voltage of 0.3 V, this product can be used by reducing the current.



Convenient feature for the discharge testing

The Auto load-off timer and the cut-off features can be applied to the discharge capacitance measurement of the rechargeable battery.



Operation mode

Applied to the 6 operating modes (Constant current, Constant resistance, Constant voltage, Constant power, Constant current + Constant voltage, Constant resistance + Constant voltage)

Accurate low-rate discharge by the Low-range (1/100)

Each operation mode of the CC, CR, and CP has 3 ranges (H, M, L). The "L" range employs the scale of 1/100 which covers the range from the small to the large scale of the current.

Current setting resolution of the PLZ334WL

H Range	5mA
M Range	0.5mA
L Range	0.05mA

Sequence function

The sequence mode can be set in 2 operation modes (Normal and fast mode). The fast mode can be set for the minimum step time of 25 μ s, and it can be synchronized with the external device by using the trigger input/output feature.

External analog control

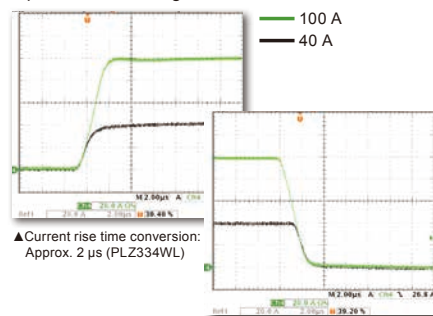
Not only the external control for the CC, CR, CP, and CV, but also it is capable to superimpose the current by the external input current on the present value of the CC setting. Moreover, it also can turn the LOAD ON/OFF.

Protection features

To ensure the safety, it equips the various protection features and activation of the alarm function. The alarm function can be output to the external source as an alarm output. The fuse is used to cut-off the output for the protection feature of the reverse connection.

Fast Slew rate

Realize the slew rate of 50 A/ μ s at 2.3 V of the load input terminal voltage.



Other features

For the switching operation, set-up memories (100), CC soft-start, slew rate setting (CC), response setting (2 levels for each CV and CR), Current monitor output, remote sensing, and more.

*Master-Slave parallel operation can not be configured on this model.

Option

- Low inductance cable [TL01-PLZ(50cm)] [TL02-PLZ(1m)] [TL03-PLZ(2m)]
- Rack mount accessories [KRA150(millimeter size)] [KRA3(inch size)]



▲TL03-PLZ

- Analog remote control connector kit [OP01-PLZ-4WL]

- Application Software [Wavy for PLZ-4W]
The current waveform can be easily simulated by the PC. The measuring feature enables data logging.

Specifications

Model		PLZ164WL	PLZ334WL
Ratings	Operating voltage (DC)	0.3 V to 30 V	
	Current	50 A	100 A
	Power	165 W	330 W
	Minimum start voltage *1	50 mV (typ)	
Constant current (CC) mode	Operating range	H	0 A to 50 A
		M	0 A to 5 A
		L	0 A to 500 mA
	Setting range	H	0 A to 52.5 A
		M	0 A to 5.25 A
		L	0 A to 525 mA
	Resolution	H	2 mA
		M	0.2 mA
		L	0.02 mA
	Accuracy of setting	±(0.2 % of set + 0.1 % of f.s.*2) + Vin/150 kΩ *3	
Input voltage variation *4	±(0.1 % of set + 0.02 % of f.s.*2)		
Constant resistance (CR) mode	Operating range	H	165 S to 3 mS (6.06 mΩ to 333 Ω)
		M	16.5 S to 300 μS (60.6 mΩ to 3.33 kΩ)
		L	1.65 S to 30 μS (606 mΩ to 33.3 kΩ)
	Setting range	H	173.25 S to 0 S (5.77 mΩ to OPEN)
		M	17.325 S to 0 S (57.7 mΩ to OPEN)
		L	1.7325 S to 0 S (577 mΩ to OPEN)
	Resolution	H	3 mS
		M	300 μS
		L	30 μS
	Accuracy of setting *7	±(0.5 % of set *8 + 0.5 % of f.s.*2) + Vin/150kΩ	
Constant voltage (CV) mode	Operating range	H	0.3 V to 30 V
		L	0.3 V to 4 V
	Setting range	H	0 V to 31.5 V
		L	0 V to 4.2 V
Resolution	H	2 mV	
L	200 μV		
Accuracy of setting	±(0.1 % of set + 0.1 % of f.s.)		
Input current variation *9	12 mV		
Constant power (CP) mode	Operating range	H	16.5 W to 165 W
		M	1.65 W to 16.5 W
		L	0.165 W to 1.65 W
	Setting range	H	0 W to 173.25 W
		M	0 W to 17.325 W
		L	0 W to 1.7325 W
	Resolution	H	10 mW
		M	1 mW
		L	0.1 mW
	Accuracy of setting	±(2.5 % of f.s.*2)	
Voltmeter	Display	H	0.000 V to 30.000 V
	L	0.0000 V to 4.0000 V	
Accuracy	±(0.1 % of reading + 0.1 % of f.s.)		
Ammeter	Display	H	0.000 A to 50.000 A
		M	0.000 A to 5.000 A
		L	0.00 mA to 500.00 mA
Accuracy	±(0.2 % of reading + 0.3 % of f.s.)		
Wattmeter	Display	H,M	0.00 W to 165.00 W
		L*15	0.000 W to 15.000 W
		L*16	0.0000 W to 1.6500 W
Switching mode	Operation mode	CC/CR mode	
	Selectable frequency range	1 Hz to 50 kHz	
	Duty cycle setting	5 % to 95 % in 1 % steps *10	
	Accuracy of frequency setting	±(0.5 % of set)	
Slew rate (CC)	Selectable range	H	2.5 mA/μs to 25 A/μs
		M	250 μA/μs to 2.5 A/μs
		L	25 μA/μs to 250 mA/μs
Accuracy of setting *11	±(10 % of set + 0.8 μs)		
Soft start	Operation mode	CC mode	
	Selectable times *12	OFF, 100 μs, 200 μs, 500 μs, 1 ms, 2 ms, 5 ms, 10 ms, or 20 ms	
Time accuracy	±(30 % of set + 10 μs)		
Response	Response speed	NORMAL, FAST	
Remote sensing	Voltage that can be compensated	3 V for a single line	
Protection function	Overvoltage protection (OVP)	Turns off the load at 115 % of the rated voltage	
	Overcurrent protection (OCP)	Setting range 10 % to 110 % of the rated current. Load off or limit selectable.	
	Overpower protection (OPP)	Setting range 10 % to 110 % of the rated power. Load off or limit selectable.	
	Overheat protection (OHP)	Turns off the load when the heat sink temperature reaches 90 °C	
	Undervoltage protection (UVP)	Turns off the load when detected. Can be set in the range of 0.3 V to 30 V.	
	Reverse connection protection (REV)	By diode and fuse. Turns off the load when an alarm occurs.	

Model		PLZ164WL	PLZ334WL	
Sequence function	Normal sequence	Operation modes	CC, CR, CV, and CP	
		Maximum number of steps	256	
		Step execution time	1 ms to 999 h 59 min	
		Time resolution	1 ms for 1 ms to 1 min, 100 ms for 1 min to 1 h, 1 s for 1 h to 10 h 10 s for 10 h to 100 h, 1 min for 100 h to 999 h 59 min	
Fast sequence	Operation modes	CC and CR		
	Maximum number of steps	1024		
	Step execution time	25 μs to 100 ms		
Time resolution	25 μs for 25 μs to 100 μs, 100 μs for 100 μs to 100 ms			
Other functions	Elapsed time display	Measures the time from load on to load off. Can be turned on and off. Measures from 1 s up to 999 h 59 min 59 s.		
	Auto load-off timer	Automatically turns off the load after a specified time elapses. Can be set to off or a time within the range of 1 s to 999 h 59 min 59 s		
Input/Output signal	J1 connector	26-pin MIL connector		
		Load on/off control input	Turn on the load with a high (or low) CMOS level signal	
		Load on status output	On when the load is on (open collector output from a photocoupler)	
		Range switch input	Switch ranges L, M, and H using a 2-bit signal	
	Range status output	Outputs range L, M, or H using a 2-bit signal (open collector output from a photocoupler)		
	Trigger input	Clear the sequence operation pause with a high CMOS level signal whose duration is 10 μs or longer		
	Alarm input	Activate the alarm with a low CMOS level signal		
	Alarm release input	Release the alarm with a low CMOS level signal		
	Alarm status output	On when OVP, OCP, OPP, OHP, UVP, or REV is activated or when an external alarm input is applied (open collector output from a photocoupler)		
	Short signal output	Relay contact output (30 Vdc/1 A)		
External voltage control (CC, CR, and CP mode)	External voltage control (CC mode)	Voltages in the range of 0 V to 10 V correspond to 0 % to 100 % of the rated current (CC mode) or rated power (CP mode). Voltages in the range of 0 V to 10 V correspond to the range of resistance values from the maximum resistance value to the minimum resistance value (CR mode).		
	External voltage control (CV mode)	Voltages in the range of 0 V to 10 V correspond to the range of voltages from 0 % of the rated voltage to 100 % of the rated voltage.		
	External voltage control (superimposing in CC mode)	Superimpose the current on the CC mode panel/remote setting by applying an external voltage of -10 V to 10 V (CC mode). 0 V corresponds to 0 % of the current setting and 10 V corresponds to 100 % of the current setting.		
	Current monitor output	10 V for f.s (H or L range), 1 V for f.s (M range)		
Front panel BNC connector	TRIG OUT	Trigger output: Approx. 4.5 V, pulse width: Approx. 2 μs, output impedance: Approx. 500 Ω		
		Outputs a (low level) pulse during sequence operation and switching operation.		
IMON OUT	Current monitor output. 1 V for f.s (H or L range), 0.1 V for f.s (M range)			
	Communication function			
GPIB, RS232C, and USB interfaces are equipped as standard.				
General Specifications	Input voltage range	100 Vac to 240 Vac (90 Vac to 250 Vac), single phase, continuous		
	Input frequency range	47 Hz to 63 Hz		
	Power consumption	95 VA max		
	Inrush current *13	65 Amax		
	Operating temperature range	0 °C to 40 °C (32 °F to 104 °F)		
	Operating humidity range	20 %rh to 85%rh (no condensation)		
	Storage temperature range	-20 °C to 70 °C (-4 °F to 158 °F)		
	Storage humidity range	90 %rh or less (no condensation)		
	Isolation voltage	±500 V		
	Insulation resistance	Primary - input terminal	500 Vdc, 30 MΩ or more (ambient humidity of 70 %rh or less)	
		Primary - chassis	500 Vdc, 30 MΩ or more (ambient humidity of 70 %rh or less)	
		Input terminal- chassis	500 Vdc, 30 MΩ or more (ambient humidity of 70 %rh or less)	
	Withstand voltage	Primary - input terminal	No abnormalities at 1500 Vac for 1 minute	
		Primary - chassis	No abnormalities at 1500 Vac for 1 minute	
	Accessories	Power cord(1 pc.(with plug, length: 2.4 m)), Load input terminal cover(1 pc.), Set of screws for the load input terminal(2 sets), Chassis connection wire(1 pc.), CD-R(1 pc.), Setup Guide(1 pc.(Japanese, English), Quick Reference(English:1pc., Japanese:1pc.)		
Complies with the requirements of the following directive and standards. Low Voltage Directive 2014/35/EU, EN 61010-1 (Class I, Pollution degree 2)				
Safety *14	Complies with the requirements of the following standard. IEC 61010-1:2001 (Class I, Pollution degree 2)			
Weight	Approx. 6.5 kg (14.3 lb.)		Approx. 8 kg (17.6 lb.)	
Dimensions (Max.)	214.5(8.45")W×124(155)(4.88")H×400(455)(15.75")Dmm			



▲ Rear panel (Not available for the load input terminal on the rear panel)

- *1 Minimum voltage at which the current starts flowing to the electronic load. At the load input terminal.
- *2 In the M range, it applies for the full scale of the H range
- *3 Vin : Input terminal voltage or the sensing voltage of the electronic load.
- *4 When the input voltage is varied from 0.3 V to 30 V at a current of the rated power/30 V
- *5 Measurement frequency bandwidth : 10 Hz to 1 MHz
- *6 Measurement frequency bandwidth : 10 Hz to 20 MHz
- *7 Conversion rate of the input current. At the sensing terminal.
- *8 set=Vin/Rset
- *9 With respect to a change in the current of 10 % to 100 % of the rating at an input voltage of 0.3 V(during remote sensing)
- *10 The minimum time width is 2 μs. Between 5 kHz to 50 kHz, the maximum duty cycle is limited by the minimum time width
- *11 Time to reach from 10 % to 90 % when the current is varied from 2 % to 100 % (20 % to 100 % in M range)
- *12 Time to reach from 10 % to 90 % of the input current
- *13 Approximately 35 A for the input voltage of AC100 V
- *14 This product is categorized in the "Class I". The protective conductor terminal of this product must be connected to the ground. The safety can not be guaranteed when it is not connected to the ground properly.
- *15 In a mode other than CP mode
- *16 In CP mode

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