

# Specifications

Rating				
Model			PLZ150U	PLZ70UA
Operating voltage (DC)			1.5 V to 150 V	0 V to 150 V
Current/power	Range	H	30 A/150 W	15 A/75 W
		M	3 A/150 W	1.5 A/75 W
		L	300 mA/45 W	150 mA/22.5 W
Isolation voltage of the load input terminal			500 VDC	
Withstand voltage between load input terminal channels			500 VDC	
Minimum start voltage *1			0.3 V or greater	

\*1 Minimum voltage at which the current starts flowing to the PLZ-U.  
 (The PLZ-U detects no signal at an input voltage less than or equal to approximately 0.3 V and an input current less than or equal to approximately 1 % of the range rating. Therefore, if the input voltage is gradually increased from 0 V, no current will flow until 0.3 V is exceeded. If a current greater than or equal to 1% of the range rating starts flowing, the current can flow at voltages less than equal to 0.3 V.)

CC mode				
Model			PLZ150U	PLZ70UA
Operating range	Range	H	0 A to 30 A	0 A to 15 A
		M	0 A to 3 A	0 A to 1.5 A
		L	0 A to 300 mA	0 A to 150 mA
Selectable range			0 % to 105 % of f.s	
Resolution	Range	H	2 mA	1 mA
		M	0.2 mA	0.1 mA
		L	0.02 mA	0.01 mA
Accuracy of setting	Range	H, M, and L	±(0.2 % of set + 0.2 % of f.s) + Vin *1/ 500 kΩ	
Input voltage variation *2	Range	H	2 mA	
		M	1 mA	
		L	0.1 mA	
Ripple		rms *3	3 mA	7.5 mA
		p-p *4	30 mA	50 mA

\*1  $V_{in}$ : Load input terminal voltage

\*2 At a current greater than or equal to  $(V_{in}/500 \text{ k}\Omega)$

\*3 Measurement frequency bandwidth: 10 Hz to 1 MHz

\*4 Measurement frequency bandwidth: 10 Hz to 20 MHz

CR mode				
Model			PLZ150U	PLZ70UA
Operating range The value inside parentheses is the conductance. *1	Range	H	OPEN to 50 mΩ (0 S to 20 S)	OPEN to 100 mΩ (0 S to 10 S)
		M	OPEN to 500 mΩ (0 S to 2 S)	OPEN to 1 Ω (0 S to 1 S)
		L	OPEN to 5 Ω (0 S to 200 mS)	OPEN to 10 Ω (0 S to 100 mS)
Selectable range			0 % to 105 % of f.s *2	
Resolution The value inside parentheses is the operating range.	Range	H	0.2 mS (0 S to 2 S)	0.1 mS (0 S to 1 S)
			2 mS (2 S to 20 S)	1 mS (1 S to 10 S)
		M	20 μS (0 S to 200 mS)	10 μS (0 S to 100 mS)
			0.2 mS (200 mS to 2 S)	0.1 mS (100 mS to 1 S)
		L	2 μS(0 S to 20 mS)	1 μS(0 S to 10 mS)
			20 μS(20 mS to 200 mS)	10 μS(10 mS to 100 mS)
Accuracy of setting *3	Range	H, M, and L	±(0.5 % of set *4 + 0.5 % of f.s *5 ) + Vin/500 kΩ	

\*1 Conductance [S] = (Input current [A]/input voltage [V]) = (1/resistance [ $\Omega$ ])

\*2 Conductance f.s

\*3 Converted value in terms of the input current, during remote sensing

\*4 set = input voltage  $\times$  specified conductance = (input voltage/specified resistance)

\*5 f.s = Rated current of the specified range

CV mode				
Model			PLZ150U	PLZ70UA
Operating range	Range	H	1.5 V to 150 V	0 V to 150 V
		L	1.5 V to 15 V	0 V to 15 V
Selectable range			0 % to 105 % of f.s	
Resolution	Range	H	10 mV	
		L	1 mV	
Accuracy of setting	Range	H and L	±(0.1 % of set + 0.1 % of f.s)	
Input current variation *1			12 mV	

\*1 During remote sensing

Voltmeter			
Model		PLZ150U	PLZ70UA
Measurement range		0 V to 150.0 V	
Resolution	15.75 V to 150 V	0.01 V	
	0 V to 15.75 V	0.001 V	
Measurement accuracy		$\pm(0.1 \% \text{ of rdg} + 15 \text{ digits})$	

Ammeter				
Model			PLZ150U	PLZ70UA
Measurement range	Range	H	0 A to 30 A	0 A to 15 A
		M	0 A to 3 A	0 A to 1.5 A
		L	0 mA to 300 mA	0 mA to 150 mA
Resolution	Range	H	0.001 A	
		M	0.0001 A	
		L	0.01 mA	
Measurement accuracy			±(0.2 % of rda + 0.3 % of f.s)	

Wattmeter *1			
Model		PLZ150U	PLZ70UA
Measurement range		0 W to 150 W	0 W to 75 W
Resolution	100 W minimum	0.01 W	
	100 W or greater	0.1 W	

\*1 Product of the measured voltage and measured current

Switching mode			
Model		PLZ150U	PLZ70UA
Operation mode		CC and CR	
Selectable frequency range		1 Hz to 20 kHz	
Duty cycle setting		2 % to 98 %, 0.1 % steps	
Frequency resolution	1 Hz to less than 1 kHz	1 Hz	
	1 kHz to less than 10 kHz	10 Hz	
	10 kHz to 20 kHz	100 Hz	
Accuracy of frequency setting		$\pm(0.5 \% \text{ of set})$	

Slew rate				
Model			PLZ150U	PLZ70UA
Operation mode			CC and CR	
Selectable range (CC)	Range	H	0.10 A/μs to 2.40 A/μs	0.05 A/μ to 1.20 A/μs
		M	0.10 A/μs to 0.24 A/μs	0.05 A/μ to 0.12 A/μs
		L	24 mA/μs *1	12 mA/μs *1
Selectable range (CR)	Range	H	0.10 A/μs to 0.24 A/μs	0.05 A/μ to 0.12 A/μs
		M	24 mA/μs *1	12 mA/μs *1
		L	2.4 mA/μs *1	1.2 mA/μs *1
Resolution			0.01 A/μs	
Accuracy of setting *2			±(10 % of set + 5 μs)	

\*1 Fixed value

\*2 Time to reach from 10 % to 90 % when the current is changed from 2 % to 100 % of the rated current of H range.

Soft start			
Model		PLZ150U	PLZ70UA
Operation mode		CC	
Selectable time range		0.1, 1, 3, 10, 30, 100, or 300 ms	
Time accuracy		$\pm(30 \% \text{ of set} + 100 \mu\text{s})$	

Sequence function			
Model		PLZ150U	PLZ70UA
Sequence	Operation mode	CC and CR	
	Maximum number of steps	255	
	Step execution time	1 ms to 9999 s	
	Number of loops	1 to 9999 (9999 is infinite loop)	

# ■ Specifications

Protection function		
Model	PLZ150U	PLZ70UA
Overvoltage protection (OVP)	Turns off the load at 110 % of the rated voltage	
Overcurrent protection (OCP)	Set the value in the range of 0 % to 110 % of the rated current of H range. Trips at the value or 110% of the rated current of the range, whichever is less. The action taken when the OCP trips can be set to load off or limit.	
Overpower protection (OPP)	Set the value in the range of 0 % to 110 % of the rated power of H range. Trips at the value or 110% of the rated power of the range, whichever is less. The action taken when the OPP trips can be set to load off or limit.	
Overheat protection (OHP)	Trips when the heat sink temperature reaches 95 °C. The action taken when the OHP trips is to turn the load off.	
Reverse connection protection (RVP)	Short-term protection provided by a short-circuit system using a protection diode. The action taken when the OHP trips is to turn the load off.	
Undervoltage protection (UVP)	Set the value to off or in the range of 0 % to 100 % of the rated voltage. The action taken when the OHP trips is to turn the load off.	

Communication function		
Model	PLZ150U	PLZ70UA
GPIB	IEEE std. 488.2-1994 SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1, C0, and E1 Supports the SCPI command set Sets panel functions except the POWER switch and key lock and reads measured values	
RS232C	D-SUB 9-pin connector (conforms to EIA-232-D) Sets panel functions except the POWER switch and key lock and reads measured values Baud rate: 2400, 4800, 9600, or 19200 bps; stop bit: 1; data length: 8 bits; parity: NONE; and flow control: XON/OFF.	

Inter-frame control and external control		
Model	PLZ150U	PLZ70UA
Inter-frame control	Controls up to four slave frames from the master frame. Enables you to turn on/off the load, recall presets ABC on all channels simultaneously, and recall setup memories 0 to 3.	
External control	Recall input of preset mem-ories A, B, and C	Recalls preset memories A, B, and C on all channels simultaneously
	Setup memory recall input	Recalls the setup memory 0 to 3
	Enable input	Enables the turning on/off of the load, recalling of presets ABC on all channels simultaneously, and recalling of setup memories 0 to 3.
	Load-on input	Turns on the load on all channels simultaneously.
	Load on status output	On when the load is on (open collector output)
	Alarm status output	On when the alarm is on (open collector output)
	Internal power output	5 V and maximum output current of 100 mA
Input signal	Low active, pull up to 5 V using 10 kΩ. Low level input voltage: 0 V to 1 V, high level input voltage: 4 V to 5 V	
Output signal	Open drain, output withstand voltage of 30 VDC, output saturation voltage of approximately 0.7 V, and maximum output current of 100 mA.	

Remote sensing		
Model	PLZ150U	PLZ70UA
Sensing voltage that can be compensated	2 V for a single line	

Miscellaneous		
Model	PLZ150U	PLZ70UA
ABC preset memories	Saves settings (A, B, and C) for each operation mode of each range	
Setup memories	Saves four sets of setup parameters	
Elapsed time display	Measures the time from when the load is turned on to when the load is turned off (0.1 s to 99999 s)	
Auto load off timer	Turns off the load after the specified time elapses (off or 1 s to 99999 s)	
Delayed load-on	Turns on the load after the specified time elapses (0 ms to 1 s, 10 ms steps)	
Parallel operation	Possible between adjacent load units (same model) in the frame.	

External analog control		
Model	PLZ150U	PLZ70UA
Power output	12 V and maximum output current of 50 mA.	
External voltage control input *1	Operates in CC, CR, and CV modes. 0 % to 100 % of f.s in the range of 0 V to 10 V.	
Load-on input.	Low active (or high active), pull up to 5 V using 10 kΩ. Low level input voltage: 0 V to 1 V, high level input voltage: 4 V to 5 V	
Current monitor output	0 % to 100 % of the rated current in the range of 0 V to 10 V	
Common	Negative pin electric potential of the load input terminal	

\*1 The time for updating the setting in CR or CV mode is approximately 100 ms.

General Specifications		
Model	PLZ150U	PLZ70UA
Weight	Approx. 2 kg (4.41 lb)	
Accessories	Rear load input terminal cover	1 pc.
	Set of screws for the load input connector	2 sets (M6 bolt, M6 nut, M6 spring washer, M4 screw)
	Load unit attachment screws	2 pcs. (M3-10 screws, attached to the unit)
	Sensing terminal screw on the rear panel	2 pcs. (M3-6 screws, attached to the unit)

Model	PLZ30F	PLZ50F
Rated supply voltage	100 VAC to 240 VAC (90 VAC to 250 V) single phase	
Rated frequency	50 Hz or 60 Hz (47 Hz to 63 Hz)	
Power consumption	Frame alone	33 VA or less
	When load units are installed in all channels	300 VAmx
Cooling system	Forced air cooling using a heat sensing variable speed fan.	
Operating temperature range	0 °C to 40 °C (32 °F to 104 °F)	
Operating humidity range	20 % to 85 % RH (without condensation)	
Storage temperature range	-20 °C to 70 °C (-4 °F to 158 °F)	
Storage humidity range	90 % RH or less (without condensation)	
Insulation resistance	Primary - chassis	500 VDC, 30 MΩ or more (ambient humidity of 70% RH or less)
Withstand voltage	Primary - chassis	No abnormalities at 1500 VAC for 1 minute.
Ground continuity	25 Aac, 0.1 Ω or less	
Battery backup	Backs up the setup data immediately before the power is turned off Battery life: 3 years or longer (at 25 °C)	
Number of installable load modules	3	5
Dimensions (mm)	See outline drawing.	
Weight	Frame alone	Approx. 5 kg (11.02 lb)
Accessories	Power cord	1 pc. (with SVT3, 18AWG, 3-prong plug, cable length of 2.4 m)
	Blank panel (front panel)	2 pcs. maximum *1
	Protection dummy plug	2 pcs. (for the FRAME CONT connector, attached to the unit)
	Operation manual	1 pc.
Electromagnetic compatibility *1, *2	Conforms to the requirements of the following directives and standards EMC Directive 2014/30/EU EN 61326-1 (Class A) EN55011 (Class A, Group 1) EN 61000-3-2 EN 61000-3-3	
Safety *3, *4	Conforms to the requirements of the following directives and standards Low Voltage Directive 2014/35/EU EN 61010-1 (Class I, Pollution degree 2)	

\*1 In products that have load units installed, blank panels are installed in the empty slots. In products that contain the frame alone, the maximum number of blank panels are installed.

\*2 Only on models that have CE marking on the panel.

\*3 Not applicable to custom order models.

\*4 This unit is a Class 1 device. Be sure to ground the protective conductor terminal of the unit. The safety of the unit is not guaranteed unless the unit is grounded properly.