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Regulated DC power supply, the PD-AD series



Model	Output rating	
	Voltage(V)	Current(A)
PD18-10AD	0 - 18	0 - 10
PD18-20AD	0 - 18	0 - 20
PD18-30AD	0 - 18	0 - 30
PD36-10AD	0 - 36	0 - 10
PD36-20AD	0 - 36	0 - 20
PD56-10AD	0 - 56	0 - 10
PD110-5AD	0 - 110	0 - 5

Outline

The PD-AD series power supplies are DC constant-voltage (CV), constant current (CC) power supplies with variable output level featuring the use of the phase control method and high reliability. Inheriting the reliability and accuracy of the highly approved PD series and incorporating a wide variety of protection facilities, the PD-AD series power supplies have been designed with emphasis on the ease of operation and safety in use as research and experiment power supplies or long aging system power supplies. With 7 combination of different voltage/current capacity values which can be selected according to applications.

Features

- **High Stability, large Capacity**

The unique phase control method which uses a built-in pre-regulator ensures first response and efficient high-stability supply of high current.

- **Low ripple, low noise**

The unique phase control method is combined with a choke-input type smoothing circuit to provide excellent input and load variation rates, low ripple and low noise.

- **High-accuracy voltage and current setting**

The output voltage as the output current can be set using 10-turn potentiometers, enabling smooth, fine setting.

- **Remote sensing**

This function compensates for the voltage drop at the load terminals which is caused by resistance of leads between the PD-AD series power supplies output terminal and the load and by output terminal contact resistance.

- **Remote control**

The output voltage and current can be controlled by means of an external DC voltage or resistance. In addition, it is also possible to remote control the output ON/OFF by means of a contact switch.

- **Voltage/Current limiting**

A V/I CHECK switch is provided to allow setting the control the constant voltage and current setting values. The voltage and current values can be set and checked even the output is ON.

- **Protections**

OVP (Over Voltage Protection), OCP (Over Current Protection) and OHP (Over Heat Protection) are available.

Specification

Item	PD18-10AD	PD18-20AD	PD18-30AD	PD36-10AD	PD36-20AD	PD56-10AD	PD110-5AD
OUTPUT							
Output voltage 10-positions	0 to 18V			0 to 36V			
Resolution (theoretical)	3.1mV			6.2mV			
Output current 10-positions	0 to 10A	0 to 20A	0 to 30A	0 to 10A	0 to 20A	0 to 10A	0 to 5A
CONSTANT-VOLTAGE CHARACTERISTICS (CV)							
Input regulation *1 (for AC±10%)	0.005%+1mV						
Load regulation *1 (for 0 to 100%)	0.005%+1mV	0.005%+2mV		0.005%+1mV	0.005%+2mV	0.005%+2mV	
Ripples/noises *2 (10Hz to 1MHz)rms	0.5mV rms						1mVrms
Transient response (Standard value)	50μsec (Typical)	100μsec (Typical)		50μsec (Typical)	100μsec (Typical)		
Temperature characteristics, (Standard)	100PPM/°C (Typical)						
Remote control resistance/voltage	Approx. 0 to 10kΩ / 0 to 10V						
CONSTANT-CURRENT CHARACTERISTICS							
Input regulation (for AC± fluctuation)	1mA	5mA		1mA	5mA	3mA	
Load regulation (for 0 to 100%)	5mA						
Ripples/noises *2 (10Hz to 1MHz)rms	3mA rms	10mA rms		3mA rms	10mA rms	3mA rms	
Remote control resistance/voltage	Approx. 0 to 10kΩ / 0 to 10V						
PROTECTION							
Operation	Turns off power switch						
Temperature detection	100°C						
Overvoltage protection level (standard value)	15 to 110% of rated output voltage						
Input fuse (at AC100V)	7A	15A	20A	12A	20A	15A	15A
METER AND INDICATIONS							
D Type	Voltage at digital display (Auto range)	3-1/2 digits 19.99V, 199.9V (F.S) two ranges ± (0.1%rdg + 1digit)23°C ± 5°C, Less than 80% RH					
	Current at digital display (Fix. range)	3-1/2 digits 19.99V, 199.9V (F.S) two ranges ± (0.1%rdg + 1digit)23°C ± 5°C, Less than 80% RH	3digits 99.9A (F.S), ± (0.5%rdg + 1digit) 23°C ± 5°C, Less than 80% RH	3-1/2 digits 19.99V, 199.9V (F.S) two ranges ± (0.1%rdg + 1digit)23°C ± 5°C, Less than 80% RH	3digits 99.9A (F.S), ± (0.5%rdg + 1digit) 23°C ± 5°C, Less than 80% RH	3-1/2 digits 19.99V, 199.9V (F.S) two ranges ± (0.1%rdg + 1digit)23°C ± 5°C, Less than 80% RH	
Indication of constant Voltage operation	CV green LED lights						
Indication of constant Current operation	CC red LED lights						
Indication of output	OUTPUT red LED lights when turned on						
FUNCTION							
Output switch	Turns on and off output.						
Voltage/current check switch	Preset voltage and current indicated with meters during on time						
Overvoltage protection (OVP) preset	Indicates the over voltage protection level on the voltmeters during on time						
Remote sensing	Via the rear panel sensor terminal						
Series control	Master / slave control						
OPERATING CONDITIONS							
Temperature	0°C to 40°C						
Humidity	Less than 80%						
Cooling	Fan						
Output polarity	Positive or negative side grounded						
Withstand voltage to ground	± 250VDC						
INSULATION RESISTANCE							
Chassis - input line	30MΩ or more at 500VDC						
Chassis - output line	20MΩ or more at 500VDC						

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Item		PD18-10AD	PD18-20AD	PD18-30AD	PD36-10AD	PD36-20AD	PD56-10AD	PD110-5AD
POWER SUPPLY								
Input voltage		AC100V/120V/200V/220V/240V ± 10% (Max. 250VAC) 50/60Hz 1 Φ						
Power consumption (at AC 100V)		Approx.360W	Approx.620W	Approx.930W	Approx.560W	Approx.1kW	Approx.800W	Approx.800W
		Approx.530VA	Approx.1kVA	Approx.1.4kVA	Approx.830VA	Approx.1.5kVA	Approx.1250VA	Approx.1250VA
Dimensions and weight								
Enclosure Dimensions (mm)	(W)	208						
	(H)	147						
	(D)	300	420	457	300	420	348	348
Maximum Dimensions (mm)	(W)	208						
	(H)	168						
	(D) (including power Input connector)	346 (355)	483 (486)	520 (523)	346 (361)	483 (486)	394 (409)	394 (409)
Weight	Approx. 13kg	Approx. 19kg	Approx. 24kg	Approx. 14kg	Approx. 23kg	Approx. 18kg	Approx. 18kg	
Accessories								
Instruction manual		1						
Input power code	100V, 120V area	2 or 3-core AC cable(2m)	2 or 3-core AC cable(2 or 2.5m)					
	200V, 220V, 240V area	3-core AC cable (2m)	3-core AC cable (2.5m)	3-core AC cable (2m)	3-core AC cable (2.5m)			
Connector retainer	100V, 120V area	None	1	1	1	1	1	1
	200V, 220V, 240V area	None	None	1	None	1	None	None
Replacement fuse	100V, 120V area	7A x 1	None	None	12A x 1	None	15A x 1	15A x 1
	200V, 220V, 240V area	4A x 1	None	None	6A x 1	None	8A x 1	8A x 1

*1 Measured via the sensing terminal.

*2 Measured with plus or minus grounded.

■ Circuit and ratings are subject to change without notice due to developments in technology.