PVS series Regulated DC Power supply



Low-profile design that improves mounting efficiency Ideal for use as rack-mounted power supplies capable of handling burn-in, aging, and other applications

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Outline

The PVS Series is a series of variable-output switching DC power supplies with excellent electrical performance and reliability and has a wide range of constant-voltage (CV) and constant-current (CC) output operation regions. It includes two types of models with output capacities of 1200 W and 2800 W, and each model in the series has a different maximum output voltage (7.5 V to 600 V). Moreover, the series has the capabilities required to form a system, such as external control, protection, and monitoring functions and a GPIB interface (for models with the GPIB feature). The series comprises 36 models in all.

Featuring a low-profile configuration suitable for rack mounting, the PVS Series power supplies can be installed in a limited space in a rack. This enables space-saving as well as efficient use of racks. The PVS Series power supplies may be used for aging tests of electronic devices such as chips, capacitors, and PDPs, and may also be used to power measurement and control systems.

Features

- Low-profile design 1200 W type: about 44 mm high 2800 W type: about 88 mm high
- Voltage and current presetting 10-turn helical potentiometers are used for both voltage and current control knobs. (Voltage setting resolution: 0.02% of maximum V)
- Simultaneous voltage and current display Digital display shows 3.5 digits using large red LEDs
- Remote control using external voltage Output voltage and current can be controlled using an external voltage source (0 to 5 V DC or 0 to 10 V DC).
- Remote control using an external resistor Output voltage and current can be controlled using an external resistor (0 to 5 kW or 0 to 10 kW).
- Output ON/OFF control ON/OFF of output can be controlled using an external 0/5 V signal.

Computer Control

- The Power Supply has a capable of Computer Control by using with PIA4800 Series. (For the detailed features of PIA4800 Series, please refer to Page 5-2)
- The model equipped with GPIB is capable of operation via Computer Control.

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REGULATED DC POWER SUPPLY

Functions

■ Parallel operation (simple parallel)

The same models can be connected in parallel to increase the current capacity.

■ Series operation (simple series)

The same models can be connected in series to increase the output voltage.

* When the power supplies are connected in series, the total output voltage must be 600 V or less.

■ Remote sensing

This feature prevents voltage drop resulting from the load-wire resistance or deterioration of stability caused by contact resistance.

Rear Panel

- 1 AC input terminals (wire clamping connector)
- 2 Power cable strain relief
- 3 DC output bus bar

(Wire clamping connector for the 60-600 V output model of 1,200 W type and the 150-600 V output model of 2,800 V type)

Remote sensing compensates a voltage drop of about 5 V for go and return when the voltage at the rear output terminals is within the rated range. Remote sensing is also available during parallel operations.

* Supply voltage to the actual load is the value obtained by subtracting the line voltage drop from the output voltage at the DC output terminals.

Monitor output

A monitoring output of 0 to 10 V is output relative to an output voltage of 0 V to rating and an output current of 0 A to rating. (Accuracy: 1%)

- 4 Bus bar shield
- 5 GPIB interface (only for models with GPIB feature)
- 6 External analog control and monitor output terminals
- 7 Sensing terminals



PVS series

REGULATED DC POWER SUPPLY

Specifications

	Output		CV (constant voltage) characteristics					CC (constant current) characteristics		
Model	CV	CC	Ripple	Line	Load	Transient	Rise / fall time*2	Ripple	Line	Load
				regulation	regulation	response*1			regulation	regulation
	V	Α	mVrms	mV	mV	ms or less	ms(at full load)	A rms	mA	mA
PVS7.5-140	0 to 7.5	0 to 140	10	5.75	11	3	100/100	0.8	72	110
PVS7.5-140(with GPIB)										
PVS12-100	- 0 to 12	0 to 100	10	8	14	3	100/100	0.8	52	80
PVS12-100(with GPIB)										
PVS20-60	0 to 20	0 to 60	10	12	20	3	100/100	0.5	32	50
PVS20-60(with GPIB)										
PVS40-30	0 to 40	0 to 30	10	22	35	3	100/100	0.5	17	27.5
PVS40-30(with GPIB)										
PVS60-20	0 to 60	0 to 20	10	32	50	3	100/100	0.5	12	20
PVS60-20(with GPIB)										
PVS100-12	0 to 100	0 to 12	10	52	80	3	170/170	0.2	8	14
PVS100-12(with GPIB)	0 to 100									
PVS150-8	0 to 150	0 to 8	20	77	118	3	170/170	0.2	6	11
PVS150-8(with GPIB)										
PVS300-4	0 to 300	0 to 4	30	152	230	3	170/170	0.2	4	8
PVS300-4(with GPIB)										
PVS600-2	0 to 600		80	202	155	2	170/170	0.2	2	6.5
PVS600-2(with GPIB)	0.0000	0102	00	302	455	5	1/0/1/0	0.2	3	0.5

	Output		CV (constant voltage) characteristics					CC (constant current) characteristics		
Model	CV	CC	Ripple	Line	Load	Transient	Rise / fall time*2	Ripple	Line	Load
				regulation	regulation	response*1			regulation	regulation
	V	A	mVrms	mV	mV	ms or less	ms(at full load)	A rms	mA	mA
PVS7.5-300	0 to 7.5	0 to 300	10	5.75	11	3	100/100	1.6	152	230
PVS7.5-300(with GPIB)										
PVS12-220	0 to 12	0 to 220	10	8	14	3	100/100	1.5	112	170
PVS12-220(with GPIB)										
PVS20-130	0 to 20	0 to 130	10	12	20	3	100/100	1.4	67	103
PVS20-130(with GPIB)										
PVS40-70	0 to 40	0 to 70	15	22	35	3	100/100	1	37	58
PVS40-70(with GPIB)										
PVS60-46	0 to 60	0 to 46	15	32	50	3	100/100	0.9	25	40
PVS60-46(with GPIB)										
PVS100-28	0 to 100	0 to 28	25	52	80	3	170/170	0.8	16	26
PVS100-28(with GPIB)	0 10 100									
PVS150-18	0 to 150	0 to 18	25	77	118	3	170/170	0.1	11	19
PVS150-18(with GPIB)										
PVS300-9	0 to 300	0 to 9	40	152	230	3	170/170	0.07	6.5	12
PVS300-9(with GPIB)									0.5	
PVS600-4	0 to 600	0 600 0 to 4	100	302	455	3	170/170	0.03	4	8
PVS600-4(with GPIB)									-+	0

*1: Recovery time taken for the output voltage to settle within a variation range of 0.5% of the previous level after the occurrence of stepwise changes in the load current value covering 10% to 90% of the rated output. Note that the output voltage is between 50% and 100% of the rating.

*2: When measured using a 0-10 V stepwise analog programming power supply and a resistive load

PVS series

REGULATED DC POWER SUPPLY

Common Specifications

	1200 W type	2800 W type			
Input power	Single phase, 85 to 130 V AC or	Single phase, 190 to 264 V AC, 47 to 63 Hz			
	190 to 264 V AC (automatic switching), 47 to 63 Hz				
Input current	24 A max. (100 V AC), 14 A max. (200 V AC)	25 A max. (200 V AC)			
Voltage to ground	±600 V DC	Same as left			
Power factor	0.65 minimum (at maximum load and 100 V AC),	0.65 minimum (at maximum load and 200 V AC)			
	0.55 minimum (at maximum load and 200 V AC)				
Efficiency	0.78(PVS7.5-140) / 0.81(PVS712-100,PVS20-60) / 0.83(PVS40-30) /	0.80(PVS7.5-300) / 0.82(PVS12-220) / 0.85(PVS20-130) /			
	0.85(PVS600-2) / 0.84 (models other than that noted)	0.87(PVS40-70) / 0.90(PVS60-46,PVS100-28,PVS150-18) /			
		0.91(PVS300-9),(PVS600-4)			
Switching frequency	Normally 78 kHz (7.5-100 V models);	Normally 31 kHz (for all models)			
	normally 62.5 kHz (150-600 V models)				
Meter indication	Voltmeter error:1% of max. V + 1 digit,	Same as left			
	ammeter error:1% of max. I + 1 digit	Same as fort			
Cooling system	Forced air cooling using fans, exhaust from the rear	Same as left			
Terminal configuration	AC input: three-terminal wire clamping connector	AC input: three-terminal wire clamping connector			
	DC output: Steel bus bar (7.5-40 V models)	DC output: Steel bus bar (7.5-100 V models)			
	Four-terminal wire clamping connector (60-600 V models)	Four-terminal wire clamping connector (150-600 V models)			
	Sensing: Five-terminal wire clamping connector	Sensing: Five-terminal wire clamping connector			
	External analog control: 15-terminal wire clamping connector	External analog control: 15-terminal wire clamping connector			
Environmental conditions	Operating ambient temperature range: 0° to +50°C				
	Storage ambient temperature range: -20° to +70°C	Same as left			
	Humidity range: 30% to 90% R.H, no condensation allowed				
Insulation resistance	Chassis to input power: 500 V DC, 30 M Ω or more				
	(when measured at an ambient humidity of 70% or less)	Same as left			
	Chassis to output power: 1,000 V DC, 20 M Ω or more	Same as left			
	(when measured at an ambient humidity of 70% or less)				
Dielectric strength	Input power to output terminals and input power to chassis:	Same as left			
	There must be no abnormality at 1,500 V AC for 1 minute.				
Dimensions	431.8 (483) W × 43.4 H × 444 (625) D mm*	431.8 (483) W × 87.63 H × 444 (625) D mm*			
Weight	Approx. 8.2 kg	Approx. 15 kg			

* Values in parentheses indicate the maximum dimensions including protrusions such as brackets.

Option

Item Name	Model	Remarks
Bracket	KRB100-PVS	For 2,800 W type and mm size (JIS compatible)
Support angle	KRB1-PVS	For rack mounting of the PVS Series (applicable to Kikusui RC322/KRO Series)
Blank panel	BP1H	Blind panel with a standard rack width of 19" and mm-size height (50 mm)
	BP191-M	Blind panel with a standard rack width of 19" and inch-size height (44.45 mm)

*To mount the PVS1200W type in an EIA standard rack, a maximum of 2 units can be stacked, keeping space for 1 unit above and below,(Note:No keeping space for the PVS2800W type.)