

PVS series

REGULATED DC POWER SUPPLY



Constant-voltage/constant-current 1200 W and 2800 W types, 36 models in all
Maximum rated output voltage of 600 V / maximum rated output current of 300 A
Low-profile design that improves mounting efficiency
Ideal for use as rack-mounted power supplies capable of handling burn-in, aging, and other applications

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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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.

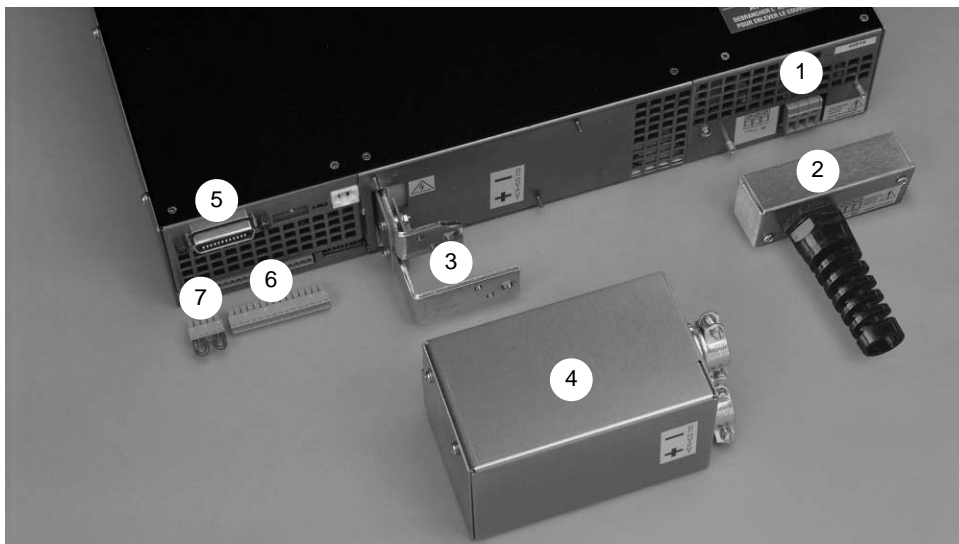
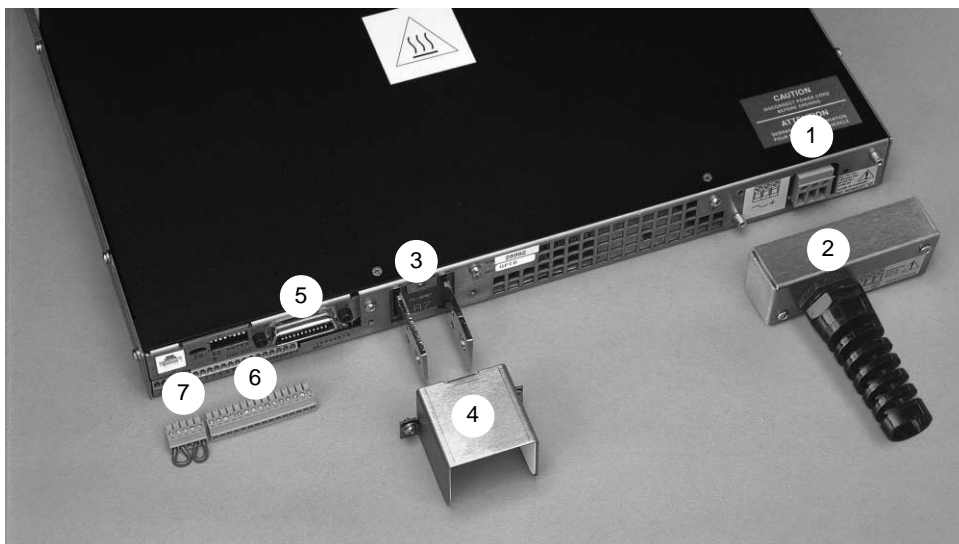
Remote sensing compensates a voltage drop of about 5 V for go and return when the voltage at the rear output terminals is within the rated range. Remote sensing is also available during parallel operations.

* 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%)

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



Specifications

Model	Output		CV (constant voltage) characteristics					CC (constant current) characteristics		
	CV	CC	Ripple	Line regulation	Load regulation	Transient response*1	Rise / fall time*2	Ripple	Line regulation	Load regulation
	V	A	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)										
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	0 to 2	80	302	455	3	170/170	0.2	3	6.5
PVS600-2(with GPIB)										

Model	Output		CV (constant voltage) characteristics					CC (constant current) characteristics		
	CV	CC	Ripple	Line regulation	Load regulation	Transient response*1	Rise / fall time*2	Ripple	Line regulation	Load 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)										
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)										
PVS600-4	0 to 600	0 to 4	100	302	455	3	170/170	0.03	4	8
PVS600-4(with GPIB)										

*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

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Common Specifications

	1200 W type	2800 W type
Input power	Single phase, 85 to 130 V AC or 190 to 264 V AC (automatic switching), 47 to 63 Hz	Single phase, 190 to 264 V AC, 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), 0.55 minimum (at maximum load and 200 V AC)	0.65 minimum (at maximum load and 200 V AC)
Efficiency	0.78(PVS7.5-140) / 0.81(PVS712-100,PVS20-60) / 0.83(PVS40-30) / 0.85(PVS600-2) / 0.84 (models other than that noted)	0.80(PVS7.5-300) / 0.82(PVS12-220) / 0.85(PVS20-130) / 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 62.5 kHz (150-600 V models)	Normally 31 kHz (for all models)
Meter indication	Voltmeter error:1% of max. V + 1 digit, ammeter error:1% of max. I + 1 digit	Same as left
Cooling system	Forced air cooling using fans, exhaust from the rear	Same as left
Terminal configuration	AC input: three-terminal wire clamping connector DC output: Steel bus bar (7.5-40 V models) Four-terminal wire clamping connector (60-600 V models) Sensing: Five-terminal wire clamping connector External analog control: 15-terminal wire clamping connector	AC input: three-terminal wire clamping connector DC output: Steel bus bar (7.5-100 V models) Four-terminal wire clamping connector (150-600 V models) Sensing: Five-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 Humidity range: 30% to 90% R.H, no condensation allowed	Same as left
Insulation resistance	Chassis to input power: 500 V DC, 30 MΩ or more (when measured at an ambient humidity of 70% or less) Chassis to output power: 1,000 V DC, 20 MΩ or more (when measured at an ambient humidity of 70% or less)	Same as left
Dielectric strength	Input power to output terminals and input power to chassis: There must be no abnormality at 1,500 V AC for 1 minute.	Same as left
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	KRB50-PVS	For 1,200 W type and mm size (JIS compatible)
	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.)