Variable Regulated DC Power Supplies PAD-LA Series

Type III, Type IV, Maximum Output Voltage (16V to 250V) 10 models
High Performance and High Reliability Power Supplies in various models

KIKUSUI

Introducing New "PAD-LA" Series variable regulated DC Power Supply as successor of "PAD-L Series" with well established recognition for reliability.

The PAD-LA Series are renewal version of our long seller models "PAD-L Series" as known for high performance and high reliability of variable DC regulated power supplies used with excellent regulators. The PAD-LA Series has polished features and performance also it has improved the "easy to use" operation by adopting an advanced design and we aim to establish the "Basic Power Supply" which can be used in all fields of application from the R&D , Quality Control to the Manufacturing site.

Lineup

16V	PAD16-100LA	TYPE III
36V	PAD36-60LA	
60V	PAD60-35LA	
72V	PAD72-30LA	
110V	PAD110-20LA	
250V	PAD250-8LA	
36V	PAD36-100LA	TYPE IV
60V	PAD60-60LA	
110V	PAD110-32LA	
250V	PAD250-15LA	

■ Use large LED monitor with high visibility for 4digits display

Adopting with the Digital display from former Analog type, which display the output Voltage, and Current. Furthermore, by locating each indication of the CV/CC and ON/OFF operation around the display, it can easily confirm the required information immediately.

■ Output and Set Switch

In separate to the Power Switch of the unit, it has equipped the "Output Switch" and also the "SET Switch" which enable to confirm the setting value of voltage and current even when the output is off.

■ Putting together of the mode setting switches

Improving the convenience of operation, we have put together all of the switches located on the upper right area of the unit for the function of Output, Adjusting display, variable resistor for setting of OVP and OCP, Setting operation mode for Analog Remote control, one control parallel operation (or series operation) to set for Master or Slave unit.

■ OCP (Over Current Protection circuit)

In addition to OVP (Over Voltage Protection circuit) function, it is equipped with OCP (Over Current Protection circuit) as standard.

■ Output Monitoring

It is equipped with the Monitor Output Terminal for Output Voltage and Output Current as standard. The Monitor Output for Output Voltage is 0 to approx. 10V at 0 to the rated output voltage, and for the Output Current is 0V to approx. 1V at 0 to the rated output current.

■ Control Terminals

Adopting the screw less wire clamp for the control terminal block on the rear panel that was used to be the harmonica terminal.

Computer Control

By using optional controller Model PIA4810, the PAD-LA Series can be controlled through by the computer.
Note: It is required for the modification of replacing ROM in case of using controller Model PIA3200.

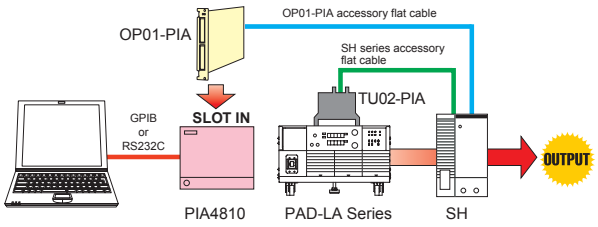
■System Expansion for PAD-LA Series / System Layout

Example for System Layout PAD-LA 1

Description of Control

- ●Output Voltage Setting
- ●Output Current Setting
- ●Read back of Output Voltage
- ●Read back of Output Current*1
- ●Output ON/OFF
- ●Power Switch OFF
- ●Alarm Monitor *2
- ●C.V. Mode Monitor *2
- ●C.C. Mode Monitor *2

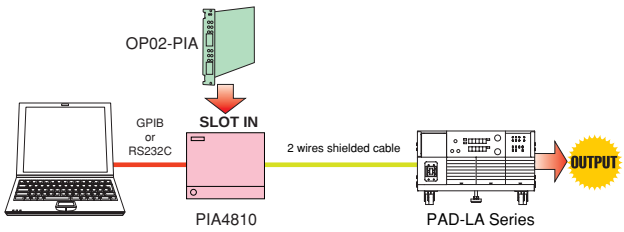
*1: For Model PAD16-100LA/PAD36-60LA/PAD36-100LA/ PAD60-60LA, please ask our Sales for details.
*2: It is required for the modification of attaching DIN connector to the Power Supply unit.



Example for System Layout PAD-LA 2

Description of Control

- ●Output Voltage Setting
- ●Output Current Setting
- ●Output ON/OFF



■External Analog Control function

- ●C.V. Control by external voltage (0V to rated value/0V to 10V) *1
- ●C.C. Control by external voltage (0A to rated value/0V to 10V) *1
- ●C.V. Control by external resistor *2
- ●C.C. Control by external resistor *2
- ●Output ON/OFF by external contact *3
- ●Power Switch shut off by external contact *4

*1:Voltage and current knob on the front panel can vary the output.
*2: It can be changed by Setting Switch for controlling the “0 to rated value/10KΩ to 0Ω” from the normal setting of “0 to rated value/0Ω to 10kΩ”.
*3: The Setting Switch can change The Output OFF for using contact open as it is normally used for Output OFF by contact short.

■Various functions

- ●Series Operation (One control: Master/Slave configuration) *4
- ●Parallel Operation (One control: Master/Slave configuration) *5
- ●Remote Sensing function
- ●OVP (Over Voltage Protection circuit)
- ●OCP (Over Current Protection circuit)
- ●OHP (Over Heat Protection circuit)
- ●Output Voltage monitor (0V to10V)
- ●Output Current monitor (0V to1V)

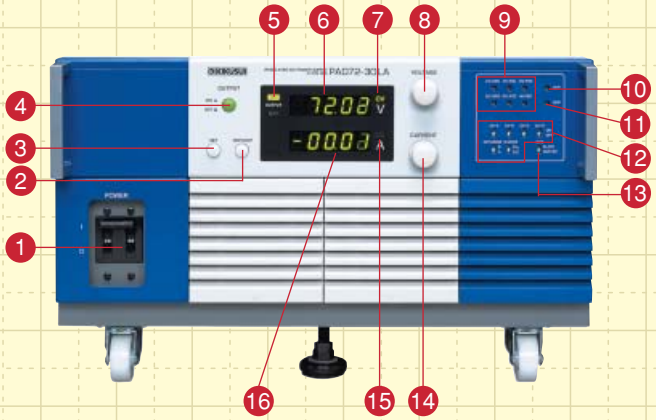
*4: It can be changed for contact open shut off by modification as it is normally shut off by contact short.
*5: Master/Slave configuration can be used for the same rated output model (Series Operation: Up to 2units for 250V model, up to 3 units for other models, Parallel Operation: up to 3units)

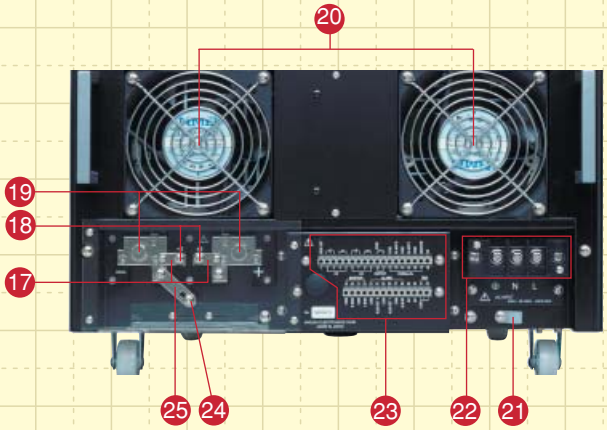
Panel Description

Front View

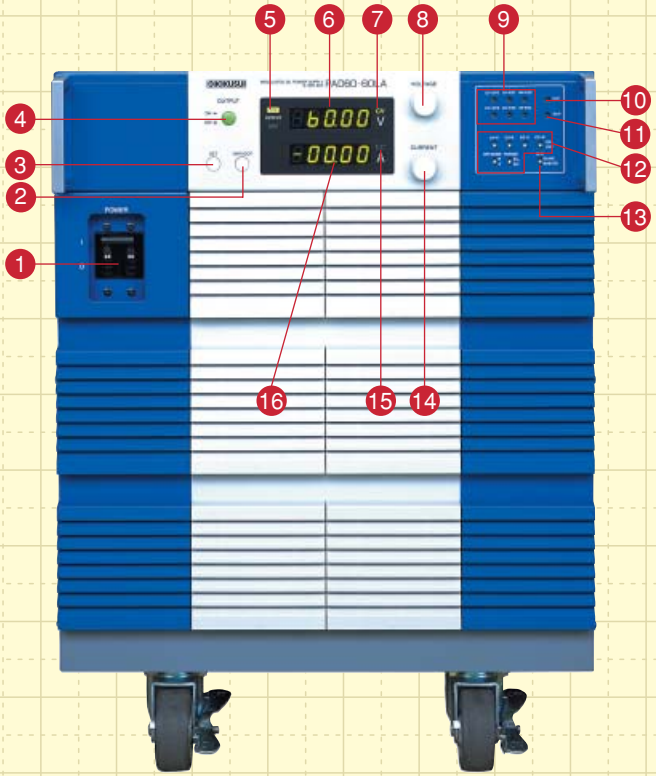
Rear View

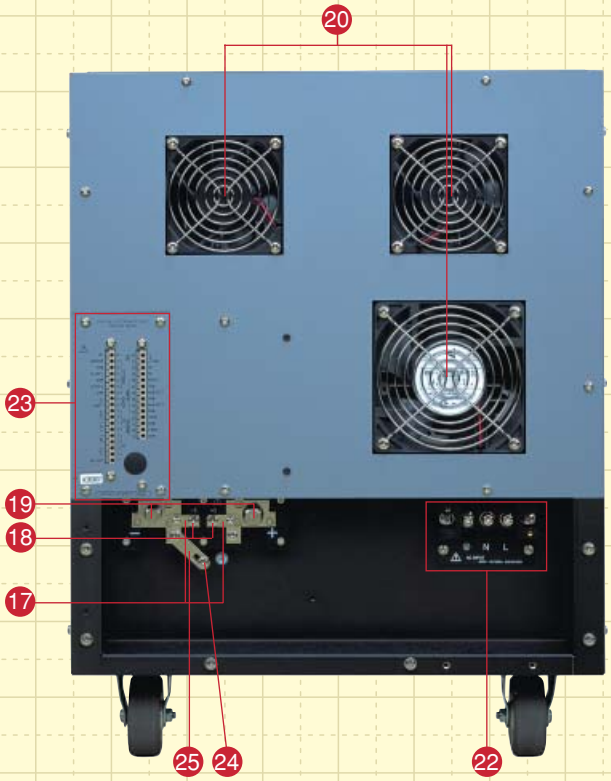
■ TYPE III





■ TYPE IV





1 POWER switch	10 OVP variable resistor	18 Sensing terminal
2 OVP/OCP switch	11 OCP variable resistor	19 DC OUTPUT terminal
3 SET switch	12 Remote control setup switch	20 Exhaust port
4 OUTPUT switch	13 M/S switch	21 Cable clamp
5 OUTPUT ON/OFF indicator	14 CURRENT knob	22 AC INPUT terminal block
6 Voltmeter	15 CC indicator	23 Control terminal block
7 CV indicator	16 Ammeter	24 Chassis terminal
8 VOLTAGE knob	17 Sensing short bar	25 Grounding short bar
9 Adjustment variable resistor		

Rack mount bracket

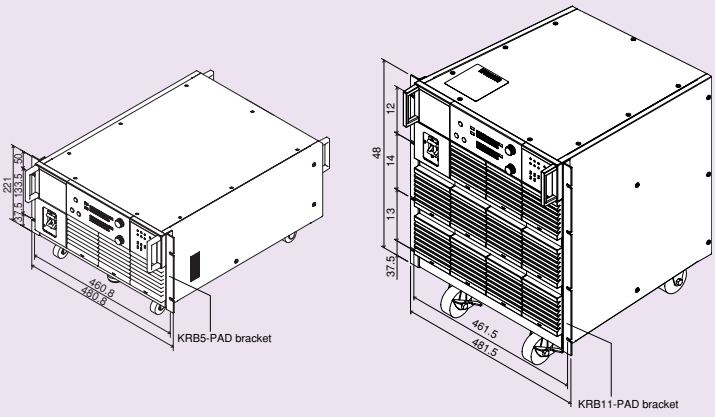
	Inch rack EIA standard		Milli rack JIS standard	
Type	Model	Unit	Model	Unit
III	KRB5-PAD	5	KRB250-PAD	5
IV	KRB11-PAD	11	KRB500-PAD	10

Note: The unit has Intake port for the ventilation of forced cooling, therefore, it is required to install the blank panel in case of assembling the unit into the rack mount system. Please refer to the detail in the “Sample figure of blank panel assembly”.

■ Bracket installation example

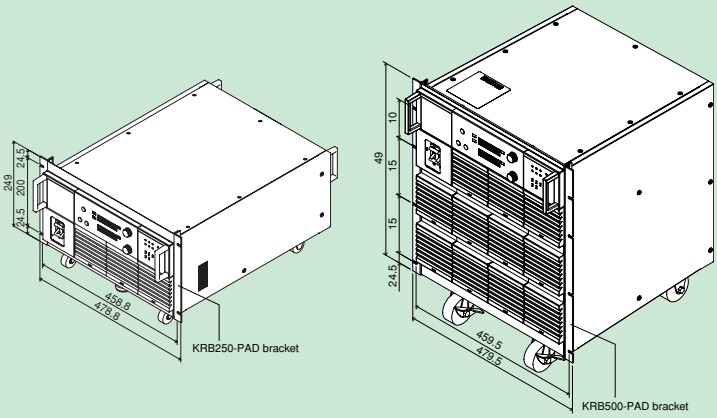
Inch rack EIA standard

Unit:mm



Milli rack JIS standard

Unit:mm



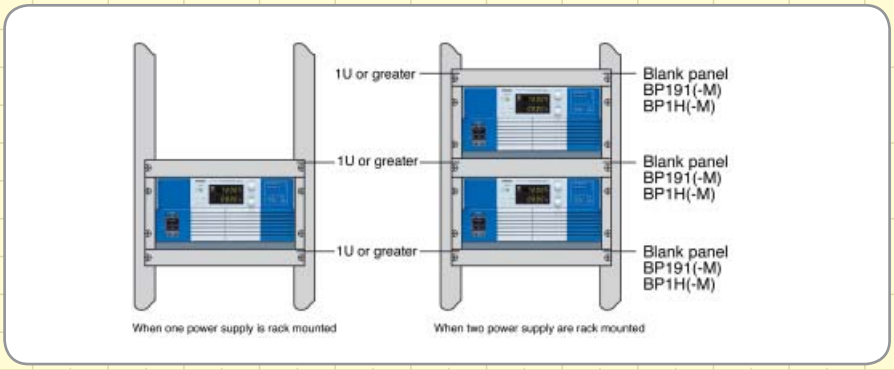
■ Brank panel

Unit	Inch rack EIA standard		Milli rack JIS standard	
	Plate type	Mesh type	Plate type	Mesh type
1	BP191	BP191-M	BP1H	BP1H-M

Note: It is not necessary for installing the blank panel in case of rack mount for type IV.

■ Brank panel installation example

Required size for the width of blank panel (unit JIS: 50mm, EIA: 44.45mm)



Specifications

Model	Output		Ripple		Line regulation		Load regulation		Dimenstions	Weight	Input	
	CV	CC	CV	CC	CV	CC	CV	CC	Type	Approx.	Voltage	Power
	V	A	mVrms	mArms	0.005%+mV	mA	0.005%+mV	mA		kg	V±10%	kVA
PAD16-100LA	0 to 16	0 to 100	0.5	100	1	3	2	5	III	65	200	3.3
PAD36-60LA	0 to 36	0 to 60	0.5	10	1	3	2	5	III	66	200	3.8
PAD36-100LA	0 to 36	0 to 100	0.5	50	1	3	2	5	IV	96	200	7.1
PAD60-35LA	0 to 60	0 to 35	0.5	8	1	3	2	3	III	64	200	3.4
PAD60-60LA	0 to 60	0 to 60	0.5	20	1	3	2	5	IV	96	200	6.9
PAD72-30LA	0 to 72	0 to 30	0.5	6	1	3	2	3	III	64	200	3.8
PAD110-20LA	0 to 110	0 to 20	1	4	1	1	2	3	III	63	200	3.8
PAD110-32LA	0 to 110	0 to 32	1	10	1	3	2	5	IV	94	200	6.7
PAD250-8LA	0 to 250	0 to 8	5	4	2	1	3	3	IV	63	200	3.4
PAD250-15LA	0 to 250	0 to 15	5	5	2	1	3	3	IV	92	200	6.7

■ Constant voltage temperature coefficient
50p.p.m./˚C (standard value)

■ Transient response time
Time until the output voltage recovers to within 0.05%+10mV of the set value when the output current changes 5% to 100%.
50μs (standard value)

■ Ripple noise
5Hz to 1MHz, ±3dB bandwidth, average value indication, measured by grounding plus or minus output with an rms value display AC voltage waveform

■ Meters

Voltmeter	Maximum display 4digits
Display error	±(0.5% of reading+5digit)*1
Ammeter	Maximum display 4 digits
Display error	±(1% of reading+5digit)*1

* 1: at 23˚C ±5˚C

■ Ground
Plus or minus terminal can be grounded

■ Isolation Voltage
±250V DC excluding PAD110-20LA/PAD250-8LA/PAD110-32LA/PAD250-15LA of which Isolation Voltage is ±500V

■ Insulation resistance
Chassis-input: 500V DC 30MΩ min.
Output-chassis: 500V DC 20MΩ min.

■ Withstanding voltage
No abnormalities when 1500VAC applied for 1 minute.

■ Operating temperature range
0 to 40˚C

■ Operating humidity range
10 to 90%

■ Cooling system
Forced air cooling using a fan

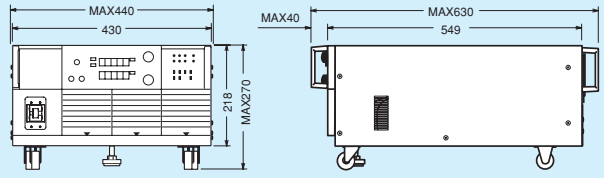
■ Protection devices
- Constant voltage, constant current automatic crossover
- Adjustable Overvoltage Protection circuit (OVP)
  (preset voltage range 10% to 110%)
- Adjustable Overcurrent Protection circuit (OCP)
  (preset current range 10% to 110%)
- Voltage detection circuit
  (smoothing capacitor section)
- Overheating protector (OHP)
  Semiconductor cooling heat sink section
- Temperature fuse (subtransformer)
- Input/output fuse
- Input surge absorber

■ Dimensions
Type III:430(440)W X 218(275)H X 549(625)Dmm
Type IV:430(440)W X 484.6(575)H X 465(525)Dmm

■ Accessories
Operation manual : 1 copy , Guard caps : 2 pcs , Weight sticker : 1 sheet
Type III
Power cord : 3-core cabtire cable for 200 VAC 1 pc. (3.5mm^2 , approx . 3m)
Type IV
Power cord : Single wire cable 3 pcs. (8mm^2 , approx . 3m) , Cable clamper : 1 set

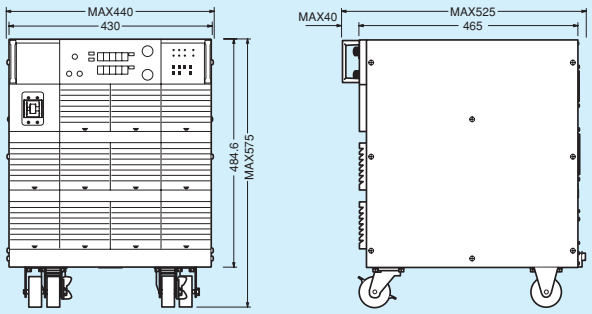
Dimensions

■ TYPE III



■ TYPE IV

Unit:mm



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●Distributor:

Printed in Japan

Issue: Aug.2008 2008080.1KCMEC21c