



# DP800 series Programmable Linear DC Power Supply

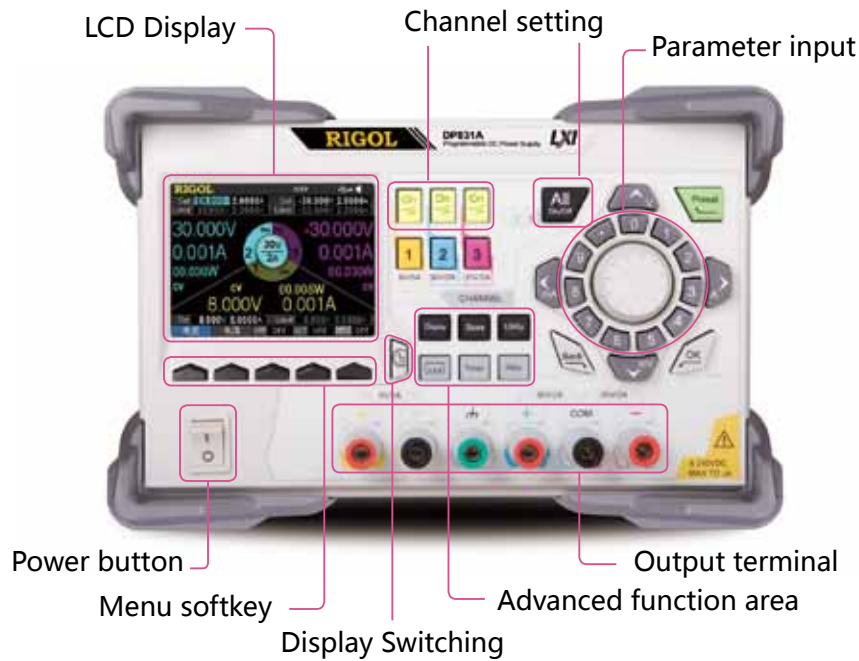
- DP832A/832:3 Outputs, CH1 || CH2,CH3, Total Power up to 195W
- DP831A:3 Outputs, CH1 || CH2,CH3, Total Power up to 160W
- DP811A:1 Output, 40V/5A or 20V/10A, with Remote Sense, Total Power up to 200W
- DP821A:2 Outputs, 60V/1A || 8V/10A, with Remote Sense, Total Power up to 140W
- Low Ripple Noise: <math><350 \mu\text{Vrms}/2\text{mVpp}</math>
- Excellent Linear Regulation Rate and Load Regulation Rate
- Fast Transient Response Time: <math><50\mu\text{s}</math>
- Standard OVP/OCP/OTP protection functions
- Standard Timing function
- Built in V,A,W measurements and waveform display
- Support Output Delay, Analysis, Monitor, Preset functions
- Independent control for each channel
- 3.5 Inch TFT Display
- Connectivity: USB Host& Device, LAN, RS232, Digital IO, USB-GPIB(Opt.)



# DP800 Series Programmable DC Power Supply

## ► Larger LCD Display Intuitive User Interface

*Observable Clean Stable Reliable Affordable*



## ► Complete Connectivity



Product Dimension: Width×Height×Depth=239mm x 157mm x 418mm Weight: 9.75 kg

## ► Typical Applications

- R&D lab General purpose testing
- Quality Assessment inspection
- Bias power for RF/MW circuits
- Automotive electronic test
- Production testing
- Device or circuit characterization and troubleshooting

► Intuitive User Interface



DP831A GUI



DP832A GUI



DP832 GUI



Timing Output



V/A/W Display



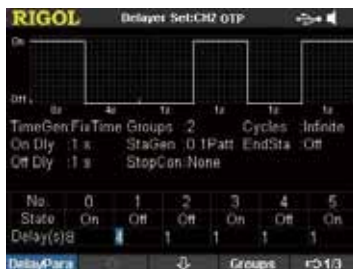
Output Analysis Function



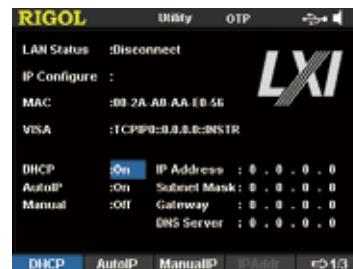
Monitor Setup



Trigger In/Out



Output Delay



LAN Setup

## ► Specifications

All the specifications are guaranteed when the instrument has been working for more than 30 minutes under the specified operation temperature. Unless otherwise noted, the specifications are applicable to all the channels of the specified model.

### DP832A/DP832/DP831A Specifications

Model	DP832A		DP832	DP831A	
Channels			3		
DC Output (0°C to 40°C)					
Voltage/current	CH1: 0 ~ 30V/0 ~ 3A CH2: 0 ~ 30V/0 ~ 3A CH3: 0 ~ 5V/0 ~ 3A			CH1: 0 ~ 8V/0 ~ 5A CH2: 0 ~ +30V/0 ~ 2A CH3: 0 ~ -30V/0 ~ 2A	
OVP/OCP	CH1: 1mV ~ 33V/1mA ~ 3.3A CH2: 1mV ~ 33V/1mA ~ 3.3A CH3: 1mV ~ 5.5V/1mA ~ 3.3A		CH1: 10mV ~ 33V/1mA ~ 3.3A CH2: 10mV ~ 33V/1mA ~ 3.3A CH3: 10mV ~ 5.5V/1mA ~ 3.3A	CH1: 1mV ~ 8.8V/0.1mA ~ 5.5A CH2: 1mV ~ 33V/0.1mA ~ 2.2A CH3: -1mV ~ -33V/0.1mA ~ 2.2A	
Load Regulation Rate ± (Output Percentage + Offset)					
Voltage			<0.01%+2mV		
Current			<0.01%+250 μ A		
Linear Regulation Rate ± (Output Percentage + Offset)					
Voltage			<0.01%+2mV		
Current			<0.01%+250 μ A		
Ripples and Noise (20Hz to 20MHz)					
Normal Mode Voltage			<350 μ Vrms/2mVpp		
Normal Mode Current			<2mArms		
Annual Accuracy <sup>[1]</sup> (25°C ± 5°C) ± (Output Percentage + Offset)					
Programming	Voltage	CH1: 0.05% + 20mV		CH1: 0.1%+5mV	
		CH2: 0.05% + 20mV		CH2: 0.05%+20mV	
		CH3: 0.1% + 5mV		CH3: 0.05%+20mV	
Current	CH1: 0.2% + 5mA		CH1: 0.2%+10mA		
	CH2: 0.2% + 5mA		CH2: 0.2%+5mA		
	CH3: 0.2% + 5mA		CH3: 0.2%+5mA		
Readback	Voltage	CH1: 0.05% + 10mV		CH1: 0.1%+5mV	
		CH2: 0.05% + 10mV		CH2: 0.05%+10mV	
		CH3: 0.1% + 5mV		CH3: 0.05%+10mV	
Current	CH1: 0.15%+ 5mA		CH1: 0.2%+10mA		
	CH2: 0.15%+ 5mA		CH2: 0.1%+5mA		
	CH3: 0.15%+ 5mA		CH3: 0.1%+5mA		
Resolution					
Programming	Voltage	1mV	10mV With high-resolution option: 1mV	1mV	
	Current	1mA	1mA 10mV	CH1: 0.3mA CH2/CH3: 0.1mA	
Readback	Voltage	0.1mV	With high-resolution option:0.1mV 1mA	0.1mV	
	Current	0.1mA	With high-resolution option:0.1mA 10mV	0.1mA	
Display	Voltage	1mV	With high-resolution option:1mV 10mA	1mV	
	Current	1mA	With high-resolution option:1mA	1mA	
Transient Response Time					
Less than 50 μ s for output to recover to within 15mV following a change in output current from full load to half load or vice versa.					
Command Processing Time <sup>[2]</sup>					
<118ms					
Temperature Coefficient per°C (Output Percentage + Offset)					
Voltage	CH1/CH2: 0.01%+5mV CH3: 0.01%+2mV			0.01%+2mV	
Current	0.01%+2mA			0.02%+3mA	
Stability <sup>[3]</sup> ± (Output Percentage + Offset)					
Voltage	CH1/CH2: 0.02%+2mV CH3: 0.01%+1mV			CH1: 0.03%+1mV CH2/CH3: 0.02% + 2mV	
Current	0.05%+2mA			CH1: 0.1%+3mA CH2/CH3: 0.05% + 1mA	
Voltage Programming Control Speed (1% within the total variation range)					
Rise	Full Load	CH1/CH2: <50ms CH3: <15ms		CH1: <18ms CH2: <33ms CH3: <35ms	
	No Load	CH1: <33ms CH2: <38ms CH3: <14ms		CH1: <17ms CH2: <36ms CH3: <42ms	

	Full Load	CH1/CH2: <46ms CH3: <24ms	CH1: <20ms CH2: <44ms CH3: <45ms
	No Load	CH1/CH2: <400ms CH3: <100ms	CH1: <200ms CH2/CH3: <400ms
<b>OVP/OCP</b>			
Accuracy ± (Output Percentage + Offset)	0.5%+0.5V/0.5%+0.5A		
Activation Time	1.5ms ( OVP≥3V ) <10ms ( OVP<3V和OCP )		
<b>Mechanical</b>			
Dimensions	239mm(W) x 157mm(H) x 418mm(D)		
Weight	10.5kg ( DP832A/DP832) 9.75kg ( DP831A )		
<b>Power</b>			
AC Input (50Hz to 60Hz)	100Vac+10%, 115Vac+10%, 230Vac+10% ( maximum 250VAC )		
<b>I/O</b>			
USB Device	1	1	1
USB Host	1	1	1
LAN	1	Option	1
RS232	1	Option	1
Digital IO	1	Option	1
USB-GPIB	Option	Option	Option
<b>Environment</b>			
Working Temperature	Full Rated Value Output: 0°C to 40°C Under Relatively Higher Temperature: the linearity of the output current reducesdecreases linearly to 50% at the highest temperature 55°C		
Cooling Method	Fan Cooling		

Note:

[1] The accuracy parameters are acquired via calibration under 25°C after 1-hour warm-up.

[2] The maximum time required for the output to change accordingly after receiving the APPLY and SOURce commands.

[3] The variation of the output within 8 hours after 30-minute warm-up when the load circuit and environment temperature are constant.

## DP811A Specifications

Model	DP811A	
Channels	1 (2 output scales)	
Output Scale	20V/10A ( Low Range )	40V/5A ( High Range )
<b>DC Output (0°C to 40°C)</b>		
Voltage	0 ~ +20V	0 ~ +40V
Current	0 ~ 10A	0 ~ 5A
OVP	0.1V ~ 22V	0.1V ~ 44V
OCP	0.1A ~ 11A	0.1V ~ 5.5A
<b>Load Regulation Rate ± (Output Percentage + Offset)</b>		
Voltage	<0.01%+2mV	
Current	<0.01%+250 μ A	
<b>Linear Regulation Rate ± (Output Percentage + Offset)</b>		
Voltage	<0.01%+2mV	
Current	<0.01%+250 μ A	
<b>Ripples and Noise (20Hz to 20MHz)</b>		
Normal Mode Voltage	<350 μ Vrms/2mVpp	
Normal Mode Current	<2mA <sub>rms</sub>	
<b>Annual Accuracy<sup>[1]</sup> (25°C ± 5°C) ± (Output Percentage + Offset)</b>		
Programming	Voltage	0.05%+10mV
	Current	0.1%+10mA
Readback	Voltage	0.05% + 10mV
	Current	0.1% + 10mA
<b>Resolution</b>		
Programming	Voltage	1mV
	Current	0.5mA
Readback	Voltage	0.1mV
	Current	0.1mA
Display	Voltage	1mV
	Current	1mA

#### Transient Response Time

Less than 50  $\mu$ s for output to recover to within 15mV following a change in output current from full load to half load or vice versa.

#### Command Processing Time<sup>[2]</sup>

<100ms

#### Temperature Coefficient per $^{\circ}$ C (Output Percentage + Offset)

Voltage 0.01%+3mV

Current 0.02%+3mA

#### Stability<sup>[3]</sup> $\pm$ (Output Percentage + Offset)

Voltage 0.02% + 1mV

Current 0.1% + 1mA

#### Voltage Programming Control Speed (1% within the total variation range)

Rise Full Load < 45 ms

No Load < 42 ms

Fall Full Load <51ms

No Load <1089ms

#### OVP/OCP

Accuracy  $\pm$  (Output Percentage + Offset) 0.5%+0.5V/0.5%+0.5A

Activation Time 1.5ms ( OVP  $\geq$  3V )

Mechanical <10ms ( OVP<3V和OCP )

#### Dimensions

Weight 239mm(W) x 157mm(H) x 418mm(D)

Power 10.3kg

#### AC Input

(50Hz to 60Hz) 100Vac+10%, 115Vac+10%, 230Vac+10% ( maximum 250VAC )

#### I/O

USB Device 1

USB Host 1

LAN 1

RS232 1

Digital IO 1

USB-GPIB Option

#### Environment

Working Temperature Full Rated Value Output: 0 $^{\circ}$ C to 40 $^{\circ}$ C

Under Relatively Higher Temperature: the output current decreases linearly to 50% at the highest temperature 55 $^{\circ}$ C

Cooling Method Fan Cooling

#### Note:

[1] The accuracy parameters are acquired via calibration under 25 $^{\circ}$ C after 1-hour warm-up.

[2] The maximum time required for the output to change accordingly after receiving the APPLy and SOURce commands.

[3] The variation of the output within 8 hours after 30-minute warm-up when the load circuit and environment temperature are constant.

## DP821A Specifications

Model	DP821A	
Channels	2	
	8V/10A	60V/1A
DC Output (0 $^{\circ}$ C to 40 $^{\circ}$ C)		
Voltage	0 ~ +8V	0 ~ +60V
Current	0 ~ 10A	0 ~ 1A
OVP	0.1V ~ 8.8V	0.1V ~ 66V
OCP	0.1A ~ 10.5A	0.1A ~ 1.1A
Load Regulation Rate $\pm$ (Output Percentage + Offset)		
Voltage	<0.01%+2mV	
Current	<0.01%+250 $\mu$ A	
Linear Regulation Rate $\pm$ (Output Percentage + Offset)		
Voltage	<0.01%+2mV	
Current	<0.01%+250 $\mu$ A	
Ripples and Noise (20Hz to 20MHz)		
Normal Mode Voltage	<350 $\mu$ Vrms/2mVpp	
Normal Mode Current	<2mArms	



### Annual Accuracy <sup>[1]</sup> (25°C ± 5°C) ± (Output Percentage + Offset)

Programming	Voltage	8V/10A: <0.05%+10mV 60V/1A: <0.1%+25mV
	Current	0.2%+10mA
Readback	Voltage	8V/10A: 0.05%+5mV 60V/1A: <0.1%+25mV
	Current	0.15%+10mA
Resolution		
Programming	Voltage	8V/10A: 1mV 60V/1A: 10mV
	Current	8V/10A: 1mA 60V/1A: 0.1mA
Readback	Voltage	60V/1A: 1mV 8V/10A: 1mV
	Current	60V/1A: 0.1mA 8V/10A: 1mA
Display	Voltage	60V/1A: 10mV 8V/10A: 1mV
	Current	60V/1A: 0.1mA 8V/10A: 1mA
	Current	60V/1A: 0.1mA 8V/10A: 1mA

### Transient Response Time

Less than 50 μs for output to recover to within 15mV following a change in output current from full load to half load or vice versa.

### Command Processing Time <sup>[2]</sup>

<100ms

### Temperature Coefficient per°C (Output Percentage + Offset)

Voltage	0.01%+3mV
Current	0.02%+3mA

### Stability <sup>[3]</sup> ± (Output Percentage + Offset)

Voltage	0.02% + 1mV
Current	0.1% + 1mA

### Voltage Programming Control Speed (1% within the total variation range)

Rise	Full Load	CH1:<92ms	CH2:<11ms
	No Load	CH1:<30ms	CH2:<15ms
Fall	Full Load	CH1:<90ms	CH2:<17ms
	No Load	CH1:<486ms	CH2:<154ms

### OVP/OCP

Accuracy ± (Output Percentage + Offset)	0.5%+0.5V/0.5%+0.5A
Activation Time	1.5ms ( OVP ≥ 3V ) <10ms ( OVP < 3V and OCP )

### Mechanical

Dimensions	239mm(W) x 157mm(H) x 418mm(D)
Weight	10kg

### Power

AC Input (50Hz to 60Hz)	100Vac+10%, 115Vac+10%, 230Vac+10% ( maximum 250VAC )
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### I/O

USB Device	1
USB Host	1
LAN	1
RS232	1

### Environment

Working Temperature	Full Rated Value Output: 0°C to 40°C Under Relatively Higher Temperature: the output current decreases linearly to 50% at the highest temperature 55°C or the input fuse is broken.
Cooling Method	Fan Cooling

#### Note:

[1] The accuracy parameters are acquired via calibration under 25°C after 1-hour warm-up.

[2] The maximum time required for the output to change accordingly after receiving the APPLy and SOURce commands.

[3] The variation of the output within 8 hours after 30-minute warm-up when the load circuit and environment temperature are constant.

## ► Ordering Information

	Description	Order Number
Model	Programmable DC Power (3 Channels)	DP832A
	Programmable DC Power (3 Channels)	DP832
	Programmable DC Power (3 Channels)	DP831A
	Programmable DC Power (2 Channels)	DP821A
	Programmable DC Power (1 Channel)	DP811A
Standard Accessories	Power cord	-
	USB data cable	CB-USBA-USBB-FF-150
	One shorted device	-
	CD (including User's Guide and Programming Guide)	-
	One fuse(50T-025H 250V 2.5A)	-
	Quick Guide	-
Optional Accessories	1mV & 1mA High resolution option(DP832)	HIRES-DP800
	4 Lines Trigger In&Out(DP832)	DIGITALIO-DP800
	On-line Monitoring and analysis(DP832)	AFK-DP800
	RS232 and LAN interface(DP832)	INTERFACE-DP800
	USB to GPIB Converter	USB-GPIB
	2 Units Rack Mount Kit	RM-2-DP800

## Warranty

Three –year warranty, excluding accessories.

**RIGOL**



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