

## Chapter 5 Specifications

All the specifications are guaranteed when the instrument has been working for more than 30 minutes under the specified operation temperature.

**Note:** Unless otherwise noted, the specifications are applicable to all the channels of the specified model.

DC Output (0°C to 40°C)			
Channel (Range)		Voltage/Current (Rated value)	OVP/OCP (Maximum Range)
DP831A	CH1	0 to 8V/0 to 5A	1mV to 8.8V/0.1mA to 5.5A
	CH2	0 to 30V/0 to 2A	1mV to 33V/0.1mA to 2.2A
	CH3	0 to -30V/0 to 2A	-1mV to -33V/0.1mA to 2.2A
DP832A	CH1	0 to 30V/0 to 3A	1mV to 33V/1mA to 3.3A
	CH2	0 to 30V/0 to 3A	1mV to 33V/1mA to 3.3A
	CH3	0 to 5V/0 to 3A	1mV to 5.5V/1mA to 3.3A
DP821A	CH1	0 to 60V/0 to 1A	1mV to 66V/0.1mA to 1.1A
	CH2	0 to 8V/0 to 10A	1mV to 8.8V/1mA to 11A
DP811A	Range1	0 to 20V/0 to 10A	1mV to 22V/0.1mA to 11A
	Range2	0 to 40V/0 to 5A	1mV to 44V/0.1mA to 5.5A

Load Regulation Rate ± (Output Percentage + Offset)	
Voltage	<0.01%+2mV
Current	<0.01%+250μA

Linear Regulation Rate ± (Output Percentage + Offset)	
Voltage	<0.01%+2mV
Current	<0.01%+250μA

Ripples and Noise (20Hz to 20MHz)	
Normal Mode Voltage	<350μVrms/2mVpp
Normal Mode Current	<2mArms

Annual Accuracy <sup>[1]</sup> (25°C ±5°C) ±(Output Percentage+Offset)					
Channel		Programming		Readback	
		Voltage	Current	Voltage	Current
<b>DP831A</b>	CH1	0.1%+5mV	0.2%+10mA	0.1%+5mV	0.2%+10mA
	CH2	0.05%+20mV	0.2%+5mA	0.05%+10mV	0.1%+5mA
	CH3	0.05%+20mV	0.2%+5mA	0.05%+10mV	0.1%+5mA
<b>DP832A</b>	CH1	0.05%+20mV	0.2%+5mA	0.05%+10mV	0.15%+5mA
	CH2	0.05%+20mV	0.2%+5mA	0.05%+10mV	0.15%+5mA
	CH3	0.1%+5mV	0.2%+5mA	0.1%+5mV	0.15%+5mA
<b>DP821A</b>	CH1	0.1%+25mV	0.2%+10mA	0.1%+25mV	0.15%+10mA
	CH2	0.05%+10mV	0.2%+10mA	0.05%+5mV	0.15%+10mA
<b>DP811A</b>	CH1	0.05%+10mV	0.1%+10mA	0.05%+10mV	0.1%+10mA

Resolution							
Channel		Programming		Readback		Display	
		Voltage	Current	Voltage	Current	Voltage	Current
<b>DP831A</b>	CH1	1mV	0.3mA	0.1mV	0.1mA	1mV	1mA
	CH2	1mV	0.1mA	0.1mV	0.1mA	1mV	1mA
	CH3	1mV	0.1mA	0.1mV	0.1mA	1mV	1mA
<b>DP832A</b>	CH1	1mV	1mA	0.1mV	0.1mA	1mV	1mA
	CH2	1mV	1mA	0.1mV	0.1mA	1mV	1mA
	CH3	1mV	1mA	0.1mV	0.1mA	1mV	1mA
<b>DP821A</b>	CH1	10mV	0.1mA	1mV	0.1mA	1mV	0.1mA
	CH2	1mV	1mA	1mV	1mA	1mV	1mA
<b>DP811A</b>	CH1	1mV	0.5mA	0.1mV	0.1mA	1mV	1mA

#### Transient Response Time

Less than 50μs for output voltage 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

#### OVP/OC

Accuracy ±(Output Percentage+Offset)      0.5%+0.5V/0.5%+0.5A

Voltage Programming Control Speed (1% within the total variation range)					
Channel		Rise		Fall	
		Full Load	No Load	Full Load	No Load
<b>DP831A</b>	CH1	<18ms	<17ms	<20ms	<200ms
	CH2	<33ms	<36ms	<44ms	<400ms
	CH3	<35ms	<42ms	<45ms	<400ms
<b>DP832A</b>	CH1	<50ms	<33ms	<46ms	<400ms
	CH2	<50ms	<38ms	<46ms	<400ms
	CH3	<15ms	<14ms	<24ms	<100ms
<b>DP821A</b>	CH1	<92ms	<30ms	<90ms	<486ms
	CH2	<11ms	<15ms	<17ms	<154ms
<b>DP811A</b>	CH1	<45ms	<42ms	<51ms	<1089ms

Temperature Coefficient per °C (Output Percentage+Offset)			
Channel		Voltage	Current
<b>DP831A</b>	CH1	0.01%+2mV	0.02%+3mA
	CH2	0.01%+2mV	0.02%+3mA
	CH3	0.01%+2mV	0.02%+3mA
<b>DP832A</b>	CH1	0.01%+5mV	0.01%+2mA
	CH2	0.01%+5mV	0.01%+2mA
	CH3	0.01%+2mV	0.01%+2mA
<b>DP821A</b>	CH1	0.01%+3mV	0.02%+3mA
	CH2	0.01%+3mV	0.02%+3mA
<b>DP811A</b>	CH1	0.01%+3mV	0.02%+3mA

Stability <sup>[3]</sup> ±(Output Percentage+Offset)			
Channel		Voltage	Current
<b>DP831A</b>	CH1	0.03%+1mV	0.1%+3mA
	CH2	0.02%+2mV	0.05%+1mA
	CH3	0.02%+2mV	0.05%+1mA
<b>DP832A</b>	CH1	0.02%+2mV	0.05%+2mA
	CH2	0.02%+2mV	0.05%+2mA
	CH3	0.01%+1mV	0.05%+2mA
<b>DP821A</b>	CH1	0.02%+1mV	0.1%+1mA
	CH2	0.02%+1mV	0.1%+1mA
<b>DP811A</b>	CH1	0.02%+1mV	0.1%+1mA

Mechanical	
Dimensions	239mm(W) x 157mm(H) x 418mm(D)
Weight	DP831A: 9.75kg DP832A: 10.5kg DP821A: 10.0kg DP811A: 10.3kg

Power	
AC Input (50Hz-60Hz)	100Vac±10%, 115Vac±10%, 230Vac±10% (maximum 250Vac)
Maximum Input Power	DP831A: 416VA DP832A: 521VA DP821A: 450VA DP811A: 503VA

I/O	
USB DEVICE	1
USB HOST	1
LAN	1
RS232	1
Digital IO	1
USB-GPIB	1 (Option, extend a GPIB interface using the USB-GPIB interface converter)
Rear Output Interface	1 for DP811A

Environment	
Cooling Method	Fan Cooling
Working Temperature	0°C to 40°C
Storage Temperature	-40°C to 70°C
Humidity	5% to 80% relative humidity
Altitude	Below 1500m

**Note**<sup>[1]</sup>: The accuracy parameters are acquired via calibration under 25°C after 1-hour warm-up.

**Note**<sup>[2]</sup>: The maximum time required for the output to change accordingly after receiving the APPLy and SOURce commands.

**Note**<sup>[3]</sup>: The variation of the output within 8 hours after 30-minute warm-up when the load circuit and environment temperature are constant.