

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 ^[1] (25°C ±5°C) ±(Output Percentage+Offset)					
Channel		Programming		Readback	
		Voltage	Current	Voltage	Current
DP831A	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
DP832A	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
DP821A	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
DP811A	CH1	0.05%+10mV	0.1%+10mA	0.05%+10mV	0.1%+10mA

Resolution							
Channel		Programming		Readback		Display	
		Voltage	Current	Voltage	Current	Voltage	Current
DP831A	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
DP832A	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
DP821A	CH1	10mV	0.1mA	1mV	0.1mA	1mV	0.1mA
	CH2	1mV	1mA	1mV	1mA	1mV	1mA
DP811A	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 ^[2]

<118ms

OVP/OCV

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
DP831A	CH1	<18ms	<17ms	<20ms	<200ms
	CH2	<33ms	<36ms	<44ms	<400ms
	CH3	<35ms	<42ms	<45ms	<400ms
DP832A	CH1	<50ms	<33ms	<46ms	<400ms
	CH2	<50ms	<38ms	<46ms	<400ms
	CH3	<15ms	<14ms	<24ms	<100ms
DP821A	CH1	<92ms	<30ms	<90ms	<486ms
	CH2	<11ms	<15ms	<17ms	<154ms
DP811A	CH1	<45ms	<42ms	<51ms	<1089ms

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

Stability ^[3] ±(Output Percentage+Offset)			
Channel		Voltage	Current
DP831A	CH1	0.03%+1mV	0.1%+3mA
	CH2	0.02%+2mV	0.05%+1mA
	CH3	0.02%+2mV	0.05%+1mA
DP832A	CH1	0.02%+2mV	0.05%+2mA
	CH2	0.02%+2mV	0.05%+2mA
	CH3	0.01%+1mV	0.05%+2mA
DP821A	CH1	0.02%+1mV	0.1%+1mA
	CH2	0.02%+1mV	0.1%+1mA
DP811A	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^[1]: The accuracy parameters are acquired via calibration under 25°C after 1-hour warm-up.

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

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