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℃ to 40℃)			
Channel (Range)		Voltage/Current	OVP/OCP
DP832	CH1 CH2 CH3	0 to 30V/0 to 3A 0 to 30V/0 to 3A 0 to 5V/0 to 3A	10mV to 33V/1mA to 3.3A 10mV to 33V/1mA to 3.3A 10mV to 5.5V/1mA to 3.3A
DP831	CH1 CH2 CH3	0 to 8V/0 to 5A 0 to 30V/0 to 2A 0 to -30V/0 to 2A	10mV to 8.8V/1mA to 5.5A 10mV to 33V/1mA to 2.2A -10mV to -33V/1mA to 2.2A
DP821	CH1 CH2	0 to 60V/0 to 1A 0 to 8V/0 to 10A	10mV to 66V/10mA to 1.1A 10mV to 8.8V/10mA to 11A
DP811	Range1 Range2	0 to 20V/0 to 10A 0 to 40V/0 to 5A	10mV to 22V/10mA to 11A 10mV to 44V/10mA 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℃±5℃)±(Output Percentage+Offset)					
Channel		Programming		Readback	
		Voltage	Current	Voltage	Current
DP832	CH1 CH2 CH3	0.05%+20mV 0.05%+20mV 0.1%+5mV	0.2%+5mA 0.2%+5mA 0.2%+5mA	0.05%+10mV 0.05%+10mV 0.1%+5mV	0.15%+5mA 0.15%+5mA 0.15%+5mA
DP831	CH1 CH2 CH3	0.1%+5mV 0.05%+20mV 0.05%+20mV	0.2%+10mA 0.2%+5mA 0.2%+5mA	0.1%+5mV 0.05%+10mV 0.05%+10mV	0.2%+10mA 0.1%+5mA 0.1%+5mA

DP821	CH1 CH2	0.1%+25mV 0.05%+10mV	0.2%+10mA 0.2%+10mA	0.1%+25mV 0.05%+5mV	0.15%+10mA 0.15%+10mA
DP811	CH1	0.05%+10mV	0.1%+10mA	0.05%+10mV	0.1%+10mA

Resolution							
Channel		Programming		Readback		Display	
		Voltage	Current	Voltage	Current	Voltage	Current
DP832	CH1 CH2 CH3	Standard					
		10mV 10mV 10mV	1mA 1mA 1mA	10mV 10mV 10mV	1mA 1mA 1mA	10mV 10mV 10mV	10mA 10mA 10mA
		With the high-resolution option					
		1mV 1mV 1mV	1mA 1mA 1mA	0.1mV 0.1mV 0.1mV	0.1mA 0.1mA 0.1mA	1mV 1mV 1mV	1mA 1mA 1mA
DP831	CH1 CH2 CH3	Standard					
		1mV 10mV 10mV	1mA 1mA 1mA	1mV 1mV 1mV	1mA 1mA 1mA	10mV 10mV 10mV	10mA 10mA 10mA
		With the high-resolution option					
		1mV 1mV 1mV	0.3mA 0.1mA 0.1mA	0.1mV 0.1mV 0.1mV	0.1mA 0.1mA 0.1mA	1mV 1mV 1mV	1mA 1mA 1mA
DP821	CH1 CH2	Standard					
		10mV 10mV	1mA 10mA	10mV 10mV	1mA 10mA	10mV 10mV	1mA 10mA
		With the high-resolution option					
		1mV 1mV	0.1mA 1mA	1mV 1mV	0.1mA 1mA	1mV 1mV	0.1mA 1mA
DP811	CH1	Standard					
		10mV	10mA	1mV	1mA	10mV	10mA
		With the high-resolution option					
		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/OCP	
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
DP832	CH1 CH2 CH3	<50ms <50ms <15ms	<33ms <38ms <14ms	<46ms <46ms <24ms	<400ms <400ms <100ms
DP831	CH1 CH2 CH3	<18ms <33ms <35ms	<17ms <36ms <42ms	<20ms <44ms <45ms	<200ms <400ms <400ms
DP821	CH1 CH2	<110ms <15ms	<30ms <15ms	<110ms <20ms	<800ms <400ms
DP811	CH1	<45ms	<42ms	<51ms	<1089ms

Temperature Coefficient per ℃ (Output Percentage+Offset)			
Channel		Voltage	Current
DP832	CH1 CH2 CH3	0.01%+5mV 0.01%+5mV 0.01%+2mV	0.01%+2mA 0.01%+2mA 0.01%+2mA
DP831	CH1 CH2 CH3	0.01%+2mV 0.01%+2mV 0.01%+2mV	0.02%+3mA 0.02%+3mA 0.02%+3mA
DP821	CH1 CH2	0.01%+3mV 0.01%+3mV	0.02%+3mA 0.02%+3mA
DP811	CH1	0.01%+3mV	0.02%+3mA

Stability [3] ±(Output Percentage+Offset)			
Channel		Voltage	Current
DP832	CH1 CH2 CH3	0.02%+2mV 0.02%+2mV 0.01%+1mV	0.05%+2mA 0.05%+2mA 0.05%+2mA
DP831	CH1 CH2 CH3	0.03%+1mV 0.02%+2mV 0.02%+2mV	0.1%+3mA 0.05%+1mA 0.05%+1mA
DP821	CH1 CH2	0.02%+1mV 0.02%+1mV	0.1%+1mA 0.1%+1mA
DP811	CH1	0.02%+1mV	0.1%+1mA

Mechanical	
Dimensions	239mm(W) x 157mm(H) x 418mm(D)
Weight	DP832: 10.5kg DP831: 9.75kg DP821: 10.0kg DP811: 10.3kg

Power	
AC Input (50Hz-60Hz)	100Vac±10%, 115Vac±10%, 230Vac±10% (maximum 250Vac)
Maximum Power	DP832: 521VA DP831: 416VA DP821: 450VA DP811: 503VA

I/O	
USB Device	1
USB Host	1
LAN	1 (Option)
RS232	1 (Option)
Digital IO	1 (Option)
USB-GPIB	1 (Option, extend a GPIB interface using the USB-GPIB interface converter)
Rear Output Interface	1 (only for DP811)

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

Note[1]: The accuracy parameters are acquired via calibration under 25℃ 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.