Typical Features

- Wide input voltage range 250-1500VDC
- Input voltage up to 1700VDC (transient, duration 2S)
- No load power consumption ≤2W
- Efficiency 91% (Typ.)
- Operating temperature from -40°C to +70°C
- Switching frequency 65KHz (Typ.)
- Input reverse polarity & under voltage protections
- Output over voltage, over current & short circuit protections
- Isolation voltage 4000VAC
- Design referred to UL1741, IEC/EN/BS 62109
- Altitude during operation 5000m Max

Application Field

BK200-800SXXG1N6 Series --- Compact size, high efficiency DC-DC modular power supplies with compliance with UL1741, EN/IEC/BS 62109 standards, wide input voltage range, low ripple, low temperature rise, low standby power consumption, high efficiency, high reliability and safety isolated. This series of products can be widely used in the fields of Solar power generation, Energy storage, Industrial control, etc. The multiple protection functions can keep the power supply and the load safety under abnormal conditions.

Typical Product List

Certificate	Part No.	Input Voltage Range		Output Specifications			Max Capacitive Load @850VDC	Ripple & Noise 20MHz (Max)	Efficiency @full load 850VDC (Typ.)
		Nominal	Range	Power	Voltage	Current			
		(VDC)	(VDC)	P(W)	Vo(VDC)	Io(mA)	uF	mVp-p	%
-	BK200-800S24G1N6	850	250 - 1500	200	24	8330	5000	300	91
-	BK200-800S24G1N6-1			200	24	8330	5000	300	91
-	BK200-800S24G1N6-2			200	24	8330	5000	300	91
-	BK200-800S28G1N6			200	28	7143	3500	300	91
-	BK200-800S28G1N6-1			200	28	7143	3500	300	91
-	BK200-800S28G1N6-2			200	28	7143	3500	300	91
-	BK200-800S32G1N6			200	32	6250	2500	300	91

Note 1: The typical value of efficiency is based on the product tested after half an hour burn-in at full load.

Note 2: The full load efficiency should be in ±2% of the typical value in this table. The efficiency is calculated by the way that the full output power is divided by the input power.

Note 3: The Ripple and Noise is tested by the Parallel-line method (please refer to the following test instruction).

Note 4: Please contact Aipu sales for other output voltages requirements of this series but not listed in this table.

Note 5: The part number suffix -1 & -2 indicate the parts with different lead wires lengths, other performances are same.

Input Specifications

Item	Test Condition	Min.	Typ.	Max.	Unit
Input voltage range	DC Input	250	850	1500	VDC
Standby power consumption	1500VDC	-	-	2	W
Input current	250VDC	-	-	1.2	A
	850VDC	-	-	0.45	
	1500VDC	-	-	0.3	
Surge current	850VDC	-	-	150	A
	1500VDC	-	-	280	
Under voltage protection	Start protection	110	-	240	VDC
	Recovery	120	-	250	
Recommended external fuse	-	6A/1500VDC time-delay fuse, necessary			
Reverse polarity protection	-	Available			
Hot plug	-	N/A			

Output Specifications

Item		Test Condition	Min.	Typ.	Max.	Unit
Voltage accuracy		Full input voltage range, any load	-	±1.0	±2.0	%
Line regulation		Rated load	-	±1.0	±1.5	
Load regulation		Nominal input voltage, 0%-100% load	-	±1.0	±1.5	
Ripple & Noise		5%-100% load, 20MHz bandwidth	-	-	300	mVp-p
Minimum load		Single Output	0	-	-	%
Temperature drift coefficient		-	-	-	±0.02	%/℃
Turn-on delay time		Input 850VDC (full load)	-	-	2000	mS
Power-off hold up time		Input 850VDC (full load)	15	-	-	mS
Dynamic response	Overshoot range	25%~50%~25%	-5.0	-	+5.0	%
	Recovery time	50%~75%~50%	-	-	5.0	mS
Output start-up overshoot		Full input voltage range	≤10			%Vo
Short circuit protection			Continuous, self-recovery			Hiccup
Over current protection		Full input voltage range	110%Io	-	200%Io	Hiccup
Over voltage protection		Output 24VDC	≤32			VDC
		Output 28VDC	≤35			
		Output 32VDC	≤50			

Note: The Ripple and Noise is tested by the Parallel-line method, please refer to the following test instruction.

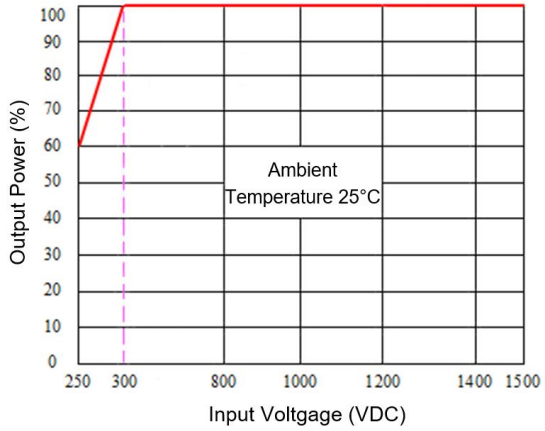
General Specifications

Item	Test Condition	Min.	Typ.	Max.	Unit
Switching frequency	-	-	65	-	KHz
Operating temperature	Refer to the temperature derating graph	-40	--	+70	℃
Storage temperature	-	-40	--	+105	℃

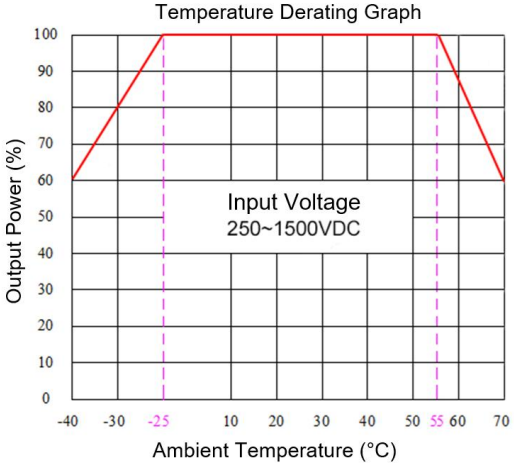
Soldering temperature		Wave soldering		260±4℃, time 5-10S			
		Manual soldering		360±8℃, time 4-7S			
Storage humidity		-		-	-	95	%RH
Isolation voltage	I/P-O/P	Dielectric test 1 Min, leakage current ≤5mA		4000	-	-	VAC
	I/P-PE			4000	-	-	
	O/P-PE			4000	-	-	
Insulation resistance	I/P-O/P	@500VDC		100	-	-	MΩ
	I/P-PE			100	-	-	
	O/P-PE			100	-	-	
MTBF		MIL-HDBK-217F@25℃		300	-	-	K Hours
Safety standard		-		Refer to UL1741, EN/IEC/BS 62109-1			
Vibration		-		10-55Hz,10G, 30Min, along X, Y, Z			
Safety class		-		CLASS I			
Weight & Dimensions		Part No.	Weight (Typ.)	Dimensions L x W x H			
		BK200-800SXXG1N6	600g	201.00x 70.00 x 42.00 mm	7.913X2.756X1.654 inch		

Product Characteristics Graphs

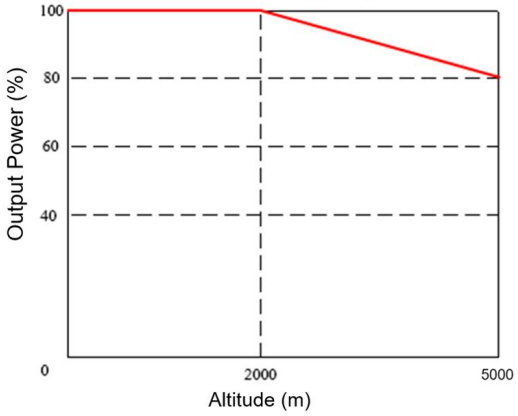
Input Voltage Derating Graph



Temperature Derating Graph



Altitude Derating Graph

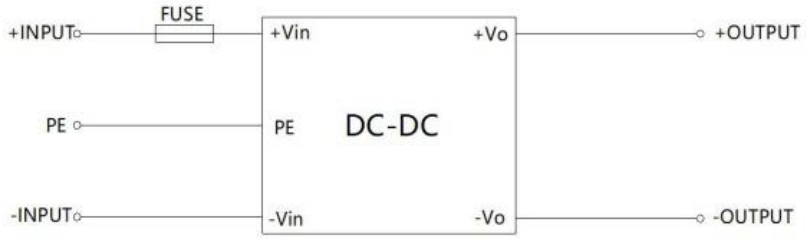


Note 1: The output power should be derated based on the input voltage derating graph at 250~300VDC.

Note 2: This product should operate under the condition of nature air, please contact us if it could be used at a closed space.

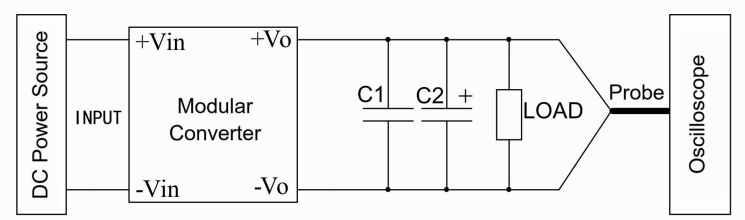
Recommended Circuit for Application

Typical application circuit diagram



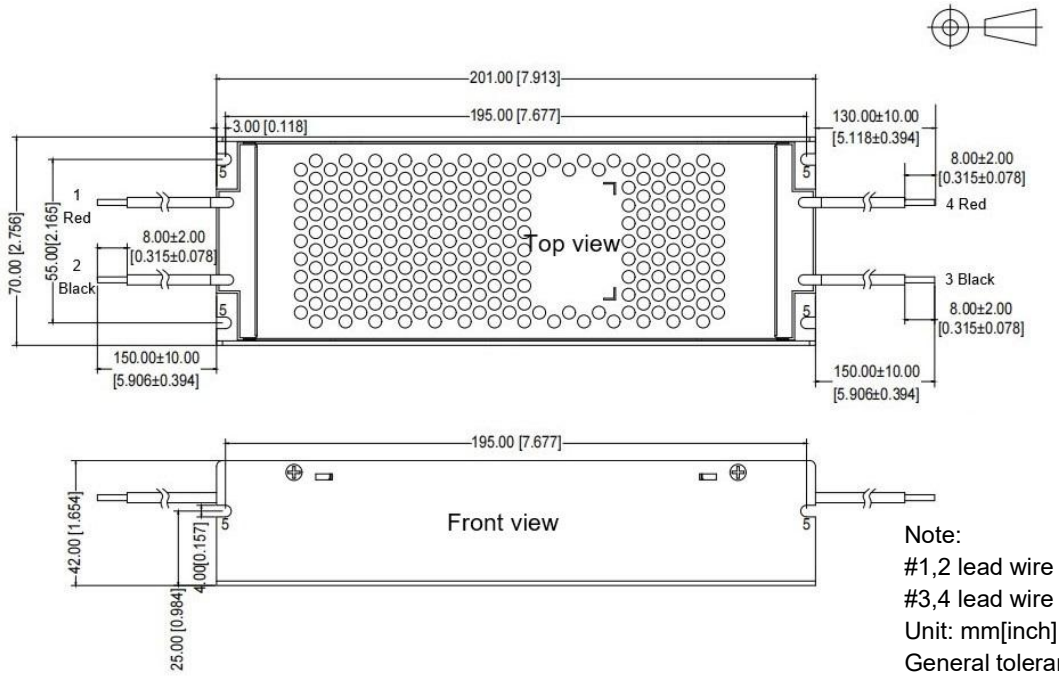
Component	Recommended Value
FUSE	6A/1500VDC, Necessary

Ripple & Noise Test Instructions (Parallel-line method, 20MHz Bandwidth)



1. The Ripple & Noise test needs the cables in parallel, an oscilloscope that should be set at the Sample Mode, bandwidth 20MHz. 100M bandwidth probe with cap & ground removed. One polypropylene capacitor C1(0.1uF) and one high frequency low impedance electrolytic capacitor C2(10uF) are connected in parallel with the probe.
2. Refer to the test diagram, the converter output connects to the electronic load by the jig with cables which size should be defined according to the output current value. The test can start at the converter output terminals after the input power on.

Mechanical Dimensions (BK200-800S24G1N6 & BK200-800S28G1N6)

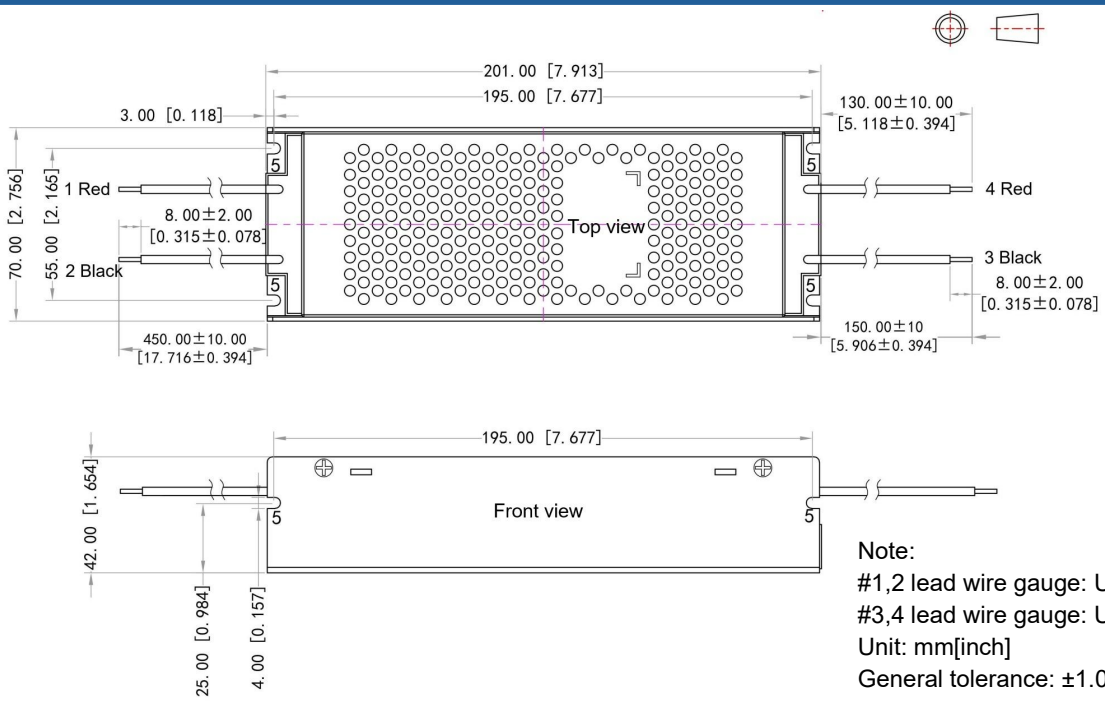


Note:
#1,2 lead wire gauge: UL3239 18AWG
#3,4 lead wire gauge: UL1015 14AWG
Unit: mm[inch]
General tolerance: ±1.00[±0.039]

Terminal Function Description

Termina No.	1 (Red)	2 (Black)	3 (Black)	4 (Red)	5 (Case)
Function	+Vin	-Vin	-Vo	+Vo	PE

Mechanical Dimensions (BK200-800S24G1N6-1)

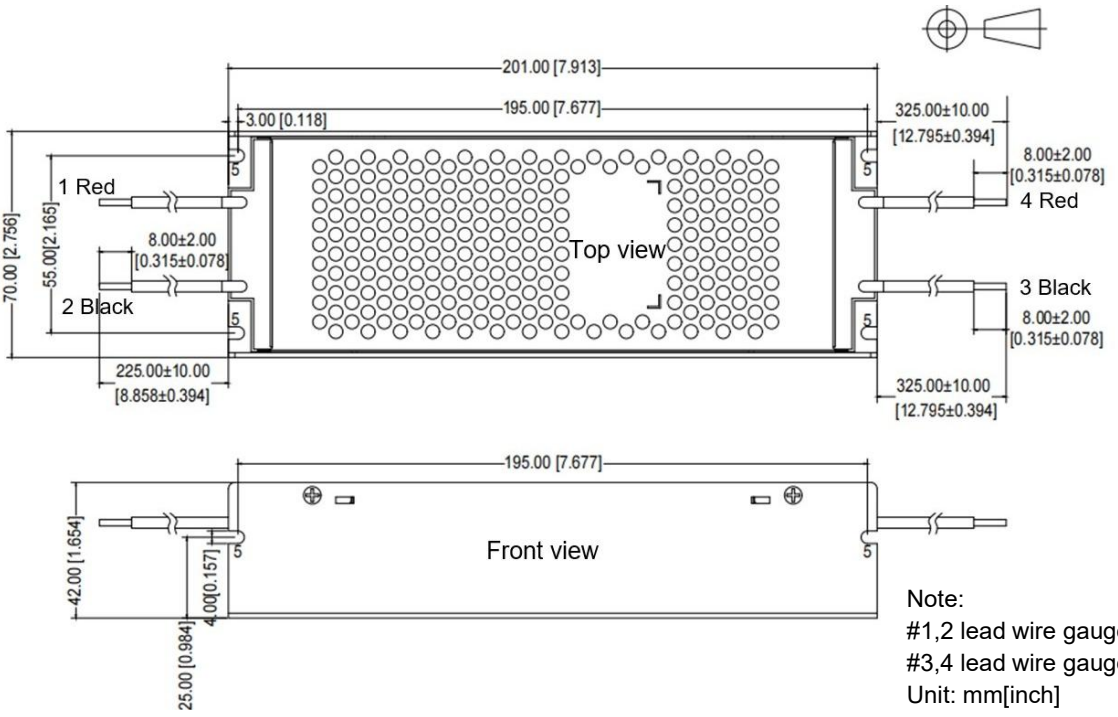


Note:
#1,2 lead wire gauge: UL3239 18AWG
#3,4 lead wire gauge: UL1015 14AWG
Unit: mm[inch]
General tolerance: ±1.00[±0.039]

Terminal Function Description

Termina No.	1 (Red)	2 (Black)	3 (Black)	4 (Red)	5 (Case)
Function	+Vin	-Vin	-Vo	+Vo	PE

Mechanical Dimensions (BK200-800S24G1N6-2)

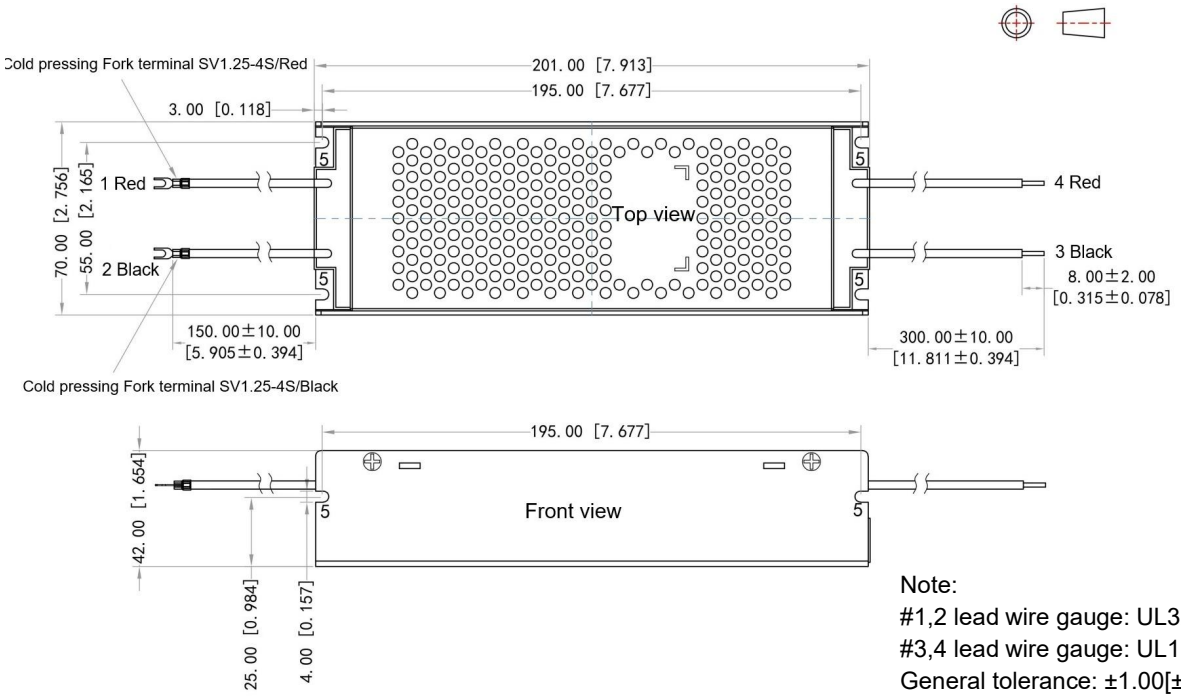


Note:
#1,2 lead wire gauge: UL3239 18AWG
#3,4 lead wire gauge: UL1015 14AWG
Unit: mm[inch]
General tolerance: ±1.00[±0.039]

Terminal Function Description

Termina No.	1 (Red)	2 (Black)	3 (Black)	4 (Red)	5 (Case)
Function	+Vin	-Vin	-Vo	+Vo	PE

Mechanical Dimensions (BK200-800S28G1N6-1)

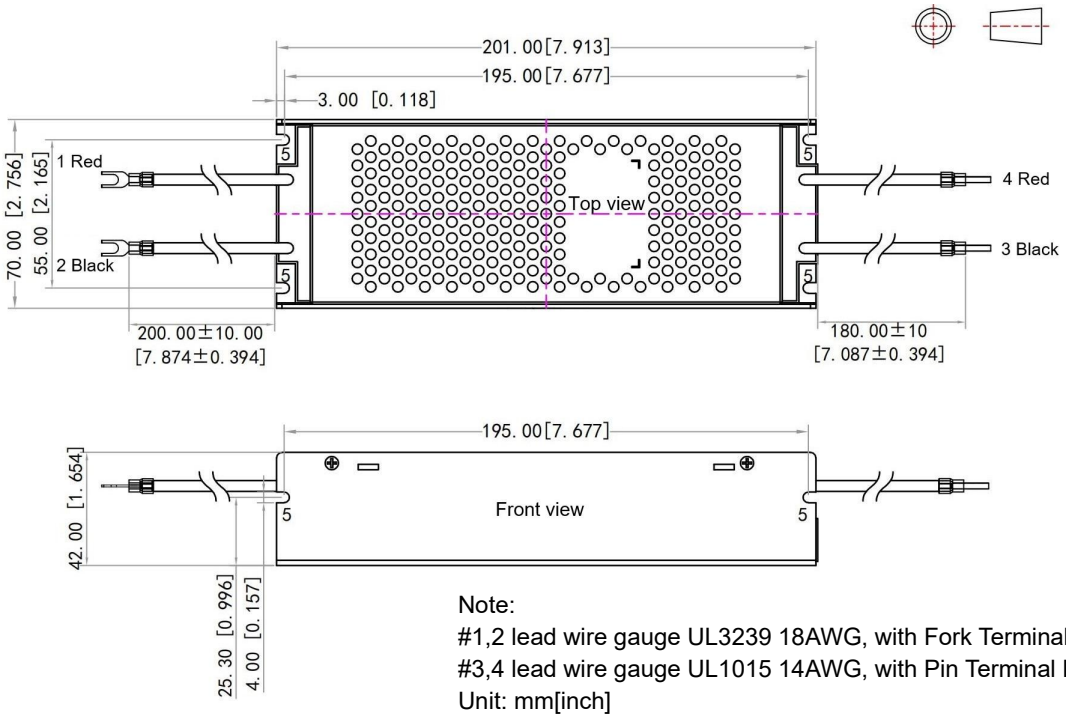


Note:
#1,2 lead wire gauge: UL3239 18AWG
#3,4 lead wire gauge: UL1015 14AWG
General tolerance: ±1.00[±0.039]

Terminal Function Description

Termina No.	1 (Red)	2 (Black)	3 (Black)	4 (Red)	5 (Case)
Function	+Vin	-Vin	-Vo	+Vo	PE

Mechanical Dimensions (BK200-800S28G1N6-2)

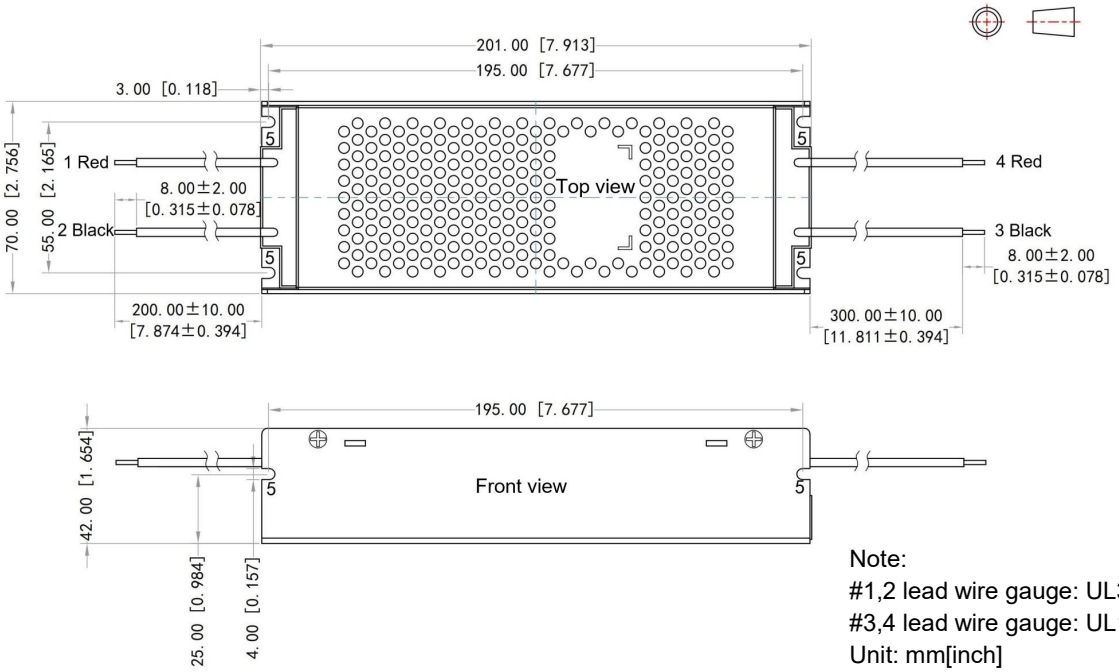


Note:
#1,2 lead wire gauge UL3239 18AWG, with Fork Terminal SV1.25-4S
#3,4 lead wire gauge UL1015 14AWG, with Pin Terminal E2508
Unit: mm[inch]
General tolerance: ±1.00[±0.039]

Terminal Function Description

Termina No.	1 (Red)	2 (Black)	3 (Black)	4 (Red)	5 (Case)
Function	+Vin	-Vin	-Vo	+Vo	PE

Mechanical Dimensions (BK200-800S32G1N6)



Note:
#1,2 lead wire gauge: UL3239 18AWG
#3,4 lead wire gauge: UL1015 14AWG
Unit: mm[inch]
General tolerance: ±1.00[±0.039]

Terminal Function Description

Terminal No.	1 (Red)	2 (Black)	3 (Black)	4 (Red)	5 (Case)
Function	+Vin	-Vin	-Vo	+Vo	PE

Part No.	Dimensions L x W x H		Input wire length	Output wire length
BK200-800S24G1N6	201.00x70.00x42.00 mm	7.913×2.756×1.654 inch	Red: 150±10mm	Red：130±10mm
			Black: 150±10mm	Black：150±10mm
BK200-800S24G1N6-1	201.00x70.00x42.00 mm	7.913×2.756×1.654 inch	Red:450±10mm	Red:130±10mm
			Black:450±10mm	Black:150±10mm
BK200-800S24G1N6-2	201.00x70.00x42.00 mm	7.913×2.756×1.654 inch	Red:225±10mm	Red:325±10mm
			Black:225±10mm	Black:325±10mm
BK200-800S28G1N6	201.00x70.00x42.00 mm	7.913×2.756×1.654 inch	Red: 150±10mm	Red: 130±10mm
			Black: 150±10mm	Black: 150±10mm
BK200-800S28G1N6-1	201.00x70.00x42.00 mm	7.913×2.756×1.654 inch	Red: 150±10mm	Red: 300±10mm
			Black: 150±10mm	Black: 300±10mm
BK200-800S28G1N6-2	201.00x70.00x42.00 mm	7.913×2.756×1.654 inch	Red:200±10mm	Red:180±10mm
			Black:200±10mm	Black:180±10mm
*BK200-800S32G1N6	201.00x70.00x42.00 mm	7.913×2.756×1.654 inch	Red: 200±10mm	Red: 300±10mm
			Black: 200±10mm	Black: 300±10mm

*Note: BK200-800S32G1N6 lead wires lengths are not same as BK200-800S24G1N6 & BK200-800S28G1N6.

Application Notice

1.The product should be used according to the specifications, otherwise it could be permanently damaged.

2. The product performance cannot be guaranteed if it works at a lower load than the minimum load defined.

3. The product performance cannot be guaranteed if it works under over-load condition.

4. Unless otherwise specified, all values or indicators on this datasheet are tested at Ta=25℃, humidity<75%RH, nominal input voltage and rated load (pure resistance load).

5. All values or indicators on this datasheet have been tested based on Aipupower test specifications.

6.The specifications are specially for the parts listed on this datasheet, any other non-standard model performances could be out of the specifications. Please contact our technician for specific requirements.

7. Aipupower can provide customization service.

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