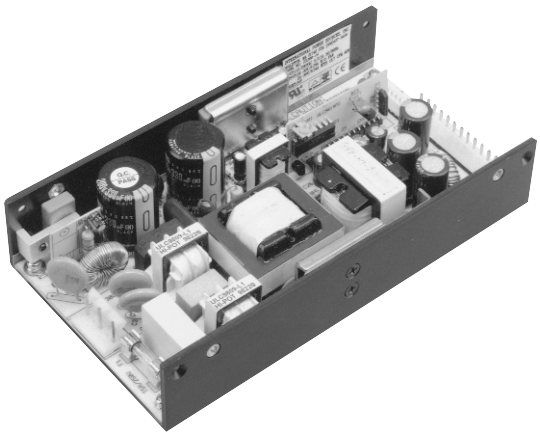
200 Watts
HUL200 Series

XPiQ inc.
Intelligent Design Quality Product



- Meets EN61000-3-2, -3
- Low Profile 1.5” Height
- Remote On/Off
- Thermal Shutdown
- Short Circuit Protection With Auto Recovery
- Power Good/LED on Power Supply
- International Safety Approvals with CE Mark (LVD)

Specification

Input

Input Voltage	*90-132 VAC, 180 to 264 VAC (auto-ranging)*
Input Frequency	*47-63 Hz*
Input Current	*5.0 A max at 115 VAC 2.5 A at 230 VAC*
Leakage Current	*3.5 mA at 230 VAC*

Output

Output Voltage	*See Tables*
Output Current	*See Tables*
Hold Up Time	*20 ms min at 125 VAC/80% load*
Ripple & Noise	*1% pk-pk or 100mV maximum*
Overvoltage Protection	*Set at 110-135% of maximum output voltage (on output #1 only)*
Overcurrent Protection:	*All outputs protected to short circuit conditions*
Temperature coefficient:	*±0.1%/°C maximum*
Transient Response	*Maximum excursion of 5% recovering to 1% of final value in less than 500 µs after a 50% step load change*
Overtemperature Protection	*Standard*

General

Efficiency	*70% typical at 230 VAC*
Line Regulation	*1% maximum at full load*
Inrush Current	*35 A at 115 VAC or 70 A at 230 VAC at +25 °C cold start*
Withstand Voltage	*3000 VAC from input to output 1500 VAC from input to ground*
Switching Frequency	*30 kHz*
Hold Up Time	*20 msec min at 125 VAC/80% load*

Environmental

Operating Temperature	*0 °C to +60 °C, derate linearly from 100% load at +40 °C to 50% load at +60 °C*
Storage Temperature	*-25 °C to +85 °C*
Relative Humidity	*5% to 90% non condensing*
MTBF	*100,000 hours*

EMC & Safety

Safety Approvals	*UL1950, CSA C22.2 No. 234 IEC 950 (EN60950)*
EMI	*In compliance with CISPR22 (EN55022), Class B and FCC Class B*

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OUTPUT VOLTAGE & CURRENT RATINGS — HUL200

Output #1				Output #2				Output #3				Output #4				Model
Vnom	Imin	Imax	Tol.	Vnom	Imin	Imax	Tol.	Vnom	Imin	Imax	Tol.	Vnom	Imin	Imax	Tol.	Number
3.3 V	0.5 A	30.0 A	2%													HUL200-10-1
5.0 V	0.5 A	40.0 A	2%													HUL200-10
12.0 V	0.5 A	16.7 A	2%													HUL200-12
15.0 V	0.5 A	13.3 A	2%													HUL200-13
24.0 V	0.5 A	8.3 A	2%													HUL200-14
48.0 V	0.5 A	4.1 A	2%													HUL200-18
+5.0 V	0.5 A	20.0 A	5%	+12 V	0 A	8.0 A	5%									HUL200-23
+5.0 V	0.5 A	20.0 A	5%	+15 V	0 A	6.6 A	5%									HUL200-24
+5.0 V	0.5 A	20.0 A	5%	+24 V	0 A	4.2 A	5%									HUL200-25
+5.0 V	0.5 A	20.0 A	5%	+12 V	0 A	8.0 A	5%					F12 V	0 A	1 A	5%	HUL200-31
+5.0 V	0.5 A	20.0 A	5%	+15 V	0 A	5.0 A	5%					F15 V	0 A	1 A	5%	HUL200-32
+5.0 V	0.5 A	20.0 A	5%	+12 V	0 A	6.0 A	5%	-5.0 V	0 A	1 A	5%	F12 V	0 A	1 A	5%	HUL200-40
+5.0 V	0.5 A	20.0 A	5%	+24 V	0 A	3.0 A	5%	-12.0 V	0 A	1 A	5%	F12 V	0 A	1 A	5%	HUL200-45
+5.0 V	0.5 A	20.0 A	5%	+15 V	0 A	5.0 A	5%	–5.0 V	0 A	1 A	5%	F15 V	0 A	1 A	5%	HUL200-46

Notes

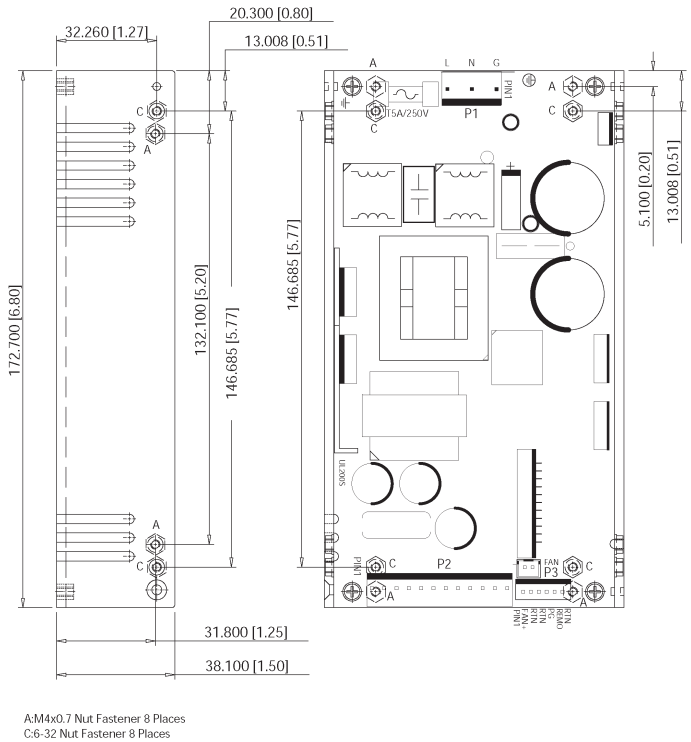
1. Use part number UL200-XX for product without harmonic correction. Example: UL200-10.
2. Total output power for HUL200-10-1 is 73 W convection cooled, 100 W with 18.7cfm forced air cooling.
3. Output #4 is floating. It can be connected externally for positive or negative output.
4. Total output power for HUL200 single output models is 150 W convection cooled, 200 W with 18.7 cfm forced air cooling.
5. Total output power for HUL200 multi output models is 100 W convection cooled, 200 W with 18.7 cfm forced air cooling.

Pin Chart

Output Connector P2

Pin	1	2	3	4	5	6	7	8	9	10	11	12
Single O/P Models	Output #1	Output #1	Output #1	Output #1	Output #1	Output #1	Return	Return	Return	Return	Return	Return
Multiple O/P Models	Output #3	Common Return	Common Return	Common Return	Common Return	Output #1	Output #1	Output #1	Output #1	Output #2	Output #4	Output #4 Return

Mechanical Details



A:M4x0.7 Nut Fastener 8 Places
C:6-32 Nut Fastener 8 Places

Single Output P3 Pinout	
Pin 1	FAN+
Pin 2	Return
Pin 3	Return
Pin 4	Power Good
Pin 5	Remote ON/OFF
Pin 6	Return

Multi output models have three separate 2 pin connectors for Fan, Power Good and Remote ON/OFF. These are clearly marked on the PCB.

NOTES:
1. Dimensions shown in mm (inches).
2. Tolerance 0.5 (0.02) maximum.
3. Input connector P1 mates with Molex housing 09-91-0500 and Molex 2478/2578/8818 Series crimp terminal.
4. Output connector P2 mates with Molex housing 09-91-1200 and Molex 2478/2578/8818 Series crimp terminal.
5. Connector P3 mates with JST XHP-6 or equivalent.
5. Weight: 800 grams approx.