

140W Convection cooled

AC-DC power supplies



The PGD140 series of 140W external desktop AC-DC power supplies conform to the Power Delivery protocol with outputs from 5V to 28V auto-selected based on the system's charging requirement. The PGD140 is available in either Class I or Class II construction. The Class II construction version with gasketed design and reinforced isolation provides enhanced safety in medical devices and home-healthcare appliances.

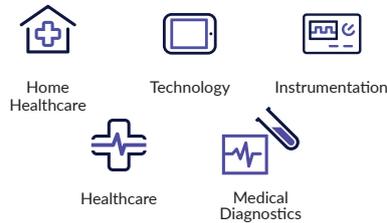
Worldwide medical and ITE safety agency approvals, low leakage currents, compact Gallium-Nitride (GaN) based design, wide 80-264VAC input for universal use, energy efficiency level VI (level VII ready) and support for multiple fast charging protocols, makes the PGD140 ideal for a wide range of industrial and BF-rated medical applications.



Features

- ▶ Output voltages from 5V to 28VDC
- ▶ Universal, single phase input: 80 to 264VAC
- ▶ Energy efficiency level VI (level VII ready) and EU2019/1782
- ▶ Class I or Class II construction
- ▶ Meets USB PD 3.1 & QC4.0+ fast charging protocol
- ▶ Medical, home healthcare & ITE safety agency approvals
- ▶ IP22 environmental rating
- ▶ Low earth leakage current
- ▶ <0.15W standby power
- ▶ Class B conducted & radiated emissions
- ▶ 0 to +60°C operation
- ▶ 3 year warranty

Applications



Dimensions

121 x 65.8 x 32mm (4.76" x 2.59" x 1.26")

Documentation

For further information click the link or scan the code

→ xppower.com



Models & ratings

Model number ⁽¹⁾	Output voltage Auto-selected by load	Output current	Output power	Total regulation ⁽²⁾	Efficiency ⁽³⁾
PGD140PS28	5.0V	3.0A	15.0W	±5%	82.0%
	9.0V	3.0A	26.0W		86.8%
	12.0V	3.0A	36.0W		87.5%
	15.0V	3.0A	45.0W		88.0%
	20.0V	5.0A	100.0W		90.0%
	28.0V	5.0A	140.0W		92.0%

Notes:

1. The PGD140PS28 is Class I construction and includes a C14 AC inlet.
2. For Class II version with a C8 AC inlet, add suffix C2-8, e.g. PGD140PS28C2-8.

3. Total regulation includes initial set accuracy, line and load regulation.
4. Typical average value measured at 25%, 50%, 75% and 100% at 115VAC & 230VAC.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage	80		264	VAC	Derate output linearly from 100% at 90VAC to 90% at 80VAC
Input frequency	47		63	Hz	
Power factor	0.9				240VAC at full load, complies with EN61000-3-2 for Class A
Input current			2.5	A	100VAC at full load
Inrush current			100	A	264VAC, cold start +25°C
Earth leakage current			1.0	mA	264VAC/60Hz
No load input power			0.15	W	
Input protection	T5A/250V Internal fuse fitted in line and neutral				
LED indicators	LED (on case) status mode - standby (Amber), normal operation (Green), and fault (flashing Amber) LED (on lead) status mode - standby (Unlit), normal operation (Green), and fault (Unlit or flashing Green)				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	5		28	VDC	5, 9, 12, 15, 20, 28VDC. Auto selected by load
Minimum load	0			A	No minimum load required
Start up delay			3	s	
Start up rise time		30	35	ms	115VAC
Hold up time	10			ms	Full load and 115VAC
Total regulation			±5		See models & ratings table
Transient response			10	%	Recovery within 1% in less than 5ms for a 60% (20% - 80% - 20%) load step and 0.5A/μs slew rate
Ripple & noise			200/300	mV/pk-pk	20MHz bandwidth and 10μF electrolytic at +25°C in parallel with 0.1μF ceramic capacitor at +25°C (5V, 9V, 12V & 15Vdc / 20V & 28VDC)
Overshoot			10	%	Turn on & turn off
Overload protection	110		150	%	
Overvoltage protection	115		150	%	Auto recovery
Temperature coefficient			0.2	%/°C	
Short circuit protection	Trip and restart (hiccup), auto resetting				
Standby leakage current		85	100	μA	264VAC, 60Hz

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See models and ratings table				
Energy efficiency	Level VI (Level VII ready)				
Isolation: input to output input to ground	4000			VAC	2 x MOPP
	1500			VAC	1 x MOPP
Switching frequency		75		kHz	PFC converter
	20	100			Main converter (varies with load)
Power density		0.55 (9.0)		W/cm ³ (W/in ³)	
Mean time between failure	300			khrs	TELEC/DIA SR-332, 25°C, GB
Weight		380 (0.84)		g (lb)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	0		+60	°C	Derate linearly from 100% load at +40°C to 50% load at +60°C, safety approved to +40°C
Operating humidity	10		90	%RH	Non-condensing
Operating altitude			5000	m	
Storage temperature	-40		+80	°C	
Storage humidity	5		95	%RH	Non-condensing
Cooling	Natural convection				

EMC: Emissions

Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032/EN55011	Class B	
Radiated	EN55032/EN55011	Class B	
Harmonic current	EN61000-3-2	Class A	
Voltage flicker	EN61000-3-3		

EMC: Immunity

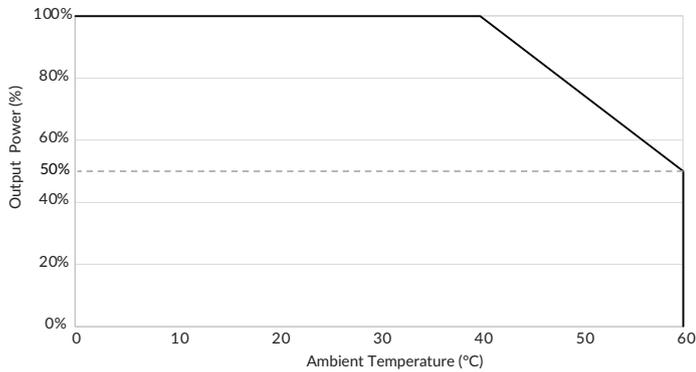
Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	4	A	±8kV contact / ±15kV air discharge
Radiated	EN61000-4-3	10V/m	A	
EFT/burst	EN61000-4-4	±2kV	A	
Surges	EN61000-4-5	Installation class 3	A	±1kV line to line, ±2kV line to earth
Conducted	EN61000-4-6	6V	A	
Magnetic field	EN61000-4-8	30A/m	A	
Dips and interruptions	EN55035 (115VAC)	Dip:100% (0VAC), 10ms	A	
		Dip:30% (80.5VAC), 500ms	A	
		Dip:100% (0VAC), 5000ms	B	
	EN55035 (230VAC)	Dip:100% (0VAC), 10ms	A	
		Dip:30% (181VAC), 500ms	A	
		Dip:100% (0VAC), 5000ms	B	
	EN60601-1-2 (100VAC)	Dip:100% (0VAC), 10ms	A	
		Dip:100% (0VAC), 20ms	B	
		Dip:30% (70VAC), 500ms	B	
	EN60601-1-2 (240VAC)	Dip:100% (0VAC), 5000ms	B	
		Dip:100% (0VAC), 10ms	A	
		Dip:100% (0VAC), 20ms	B	
Dip:30% (168VAC), 500ms		A		
		Dip:100% (0VAC), 5000ms	B	

Safety approvals

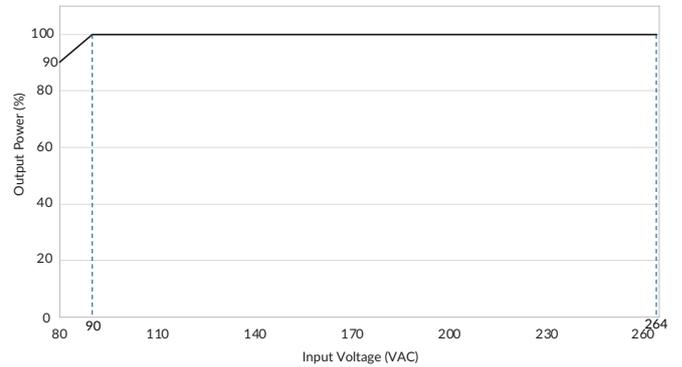
Safety agency	Standard	Notes & conditions
UL	UL 62368-1	Audio/video, information and communication technology equipment
	ANSI/AAMI ES60601-1	Medical
EN	EN62368-1	Audio/video, information and communication technology equipment
	EN60601-1, EN60601-1-11	Medical, 60601-1-11 is only for Class II versions
CB	IEC62368-1	Audio/video, information and communication technology equipment
	IEC60601-1, IEC60601-1-11	Medical, 60601-1-11 is only for Class II versions
CSA	CAN/CSA C22.2 No. 62368-1-14	Audio/video, information and communication technology equipment
	CSA C22.2 No.60601-1	Medical
CCC	China Compulsory Certification GB17625.1, GB4943.1, GB/T9254	Audio/video, information and communication technology equipment
AU/NZ	AS/NZS 62368.1	Audio/video, information and communication technology equipment
CE	Meets all applicable directives	
UKCA	Meets all applicable directives	

Application notes

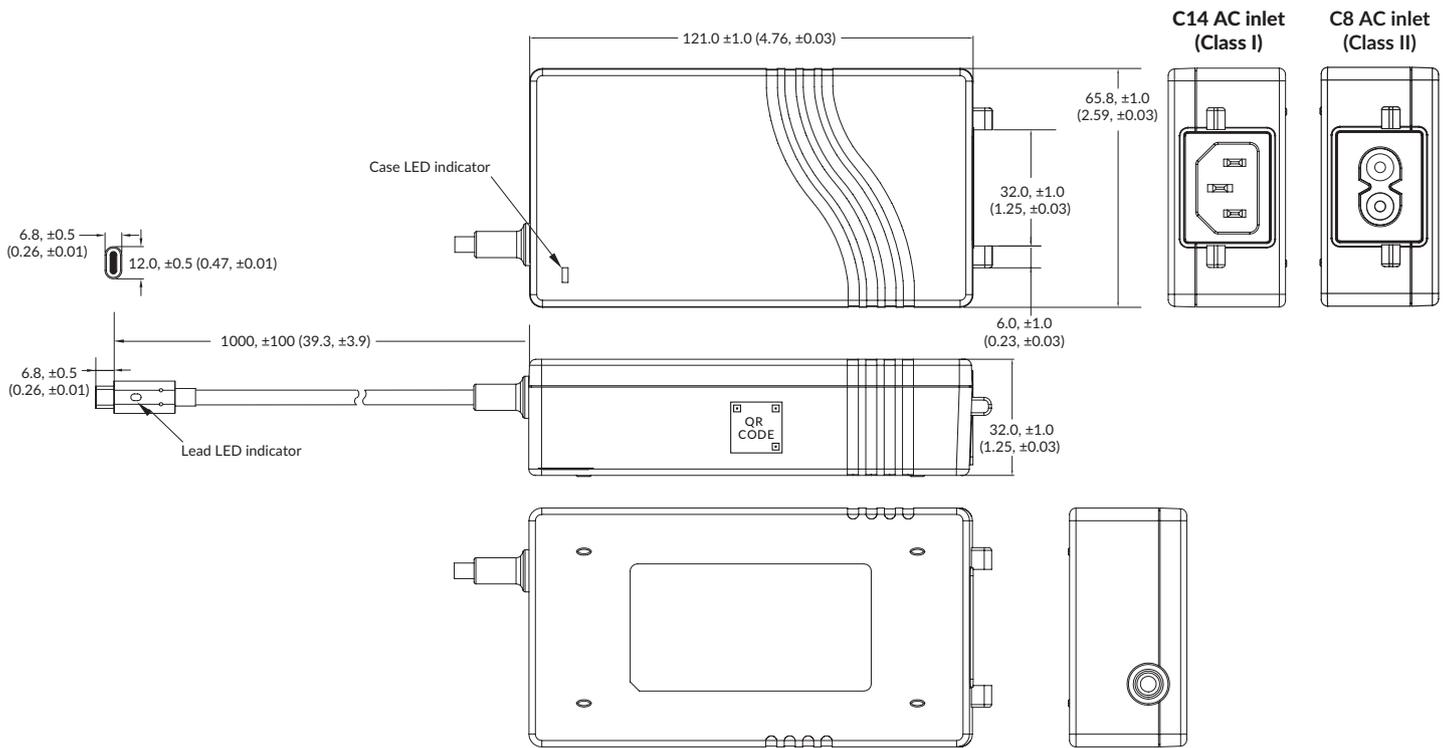
Ambient derating



Input derating



Mechanical details



LED indicators		Description
Case LED	Lead LED	
Amber	Unlit	Charger is connected to AC but not connected to load
Green	Green	Charger is connected to AC and connected to load
Flashing amber	Flashing green	Charger is connected to AC and there is a charging fault
Flashing amber	Unlit	Charger is connected to AC and the load is faulty

Notes:

1. All dimensions shown in mm (inches).
2. Weight: 380g (0.84lb) approx.

3. Output connector: USB Type-C