UCH750 series

XP Power

750W Convection cooled

AC-DC power supplies

The UCH750 series of 750W medical AC-DC power supplies offer high efficiency and 2 x MOPP isolation in a compact convection-cooled package, enabling designers to reduce system complexity, eliminate fan noise, and improve overall system reliability. Featuring global medical and ITE safety approvals, Class B EMC, low leakage currents, Class II construction and remote on/off, the UCH750 simplifies system integration while providing the flexibility needed across a broad range of medical and industrial applications.

Designed for BF-rated medical equipment, the UCH750 is ideal for imaging systems, patient monitoring and treatment equipment, diagnostic instruments, and home healthcare devices. It is equally well suited to test and measurement systems, factory automation, semiconductor manufacturing equipment, telecommunications infrastructure, and other applications where quiet operation, high efficiency, and dependable power delivery are critical.

Features

- 750W convection cooled
- Universal, single phase input: 90 to 264VAC
- High efficiency, up to 96%
- IEC60601-1 medical safety agency approvals
- IEC62368-1 ITE safety agency approvals
- Overvoltage category III
- Class B conducted and radiated emissions
- Low leakage currents
- Remote On/Off
- 5V 2A standby
- Over current, over voltage & over temperature protection
- -20°C to +70°C operating temperature
- 3 year warranty

Applications

Healthcare

Home healthcare

Medical diagnostic

Process control

Robotics

Test & measurement

Dimensions

203.2 x 127.0 x 40.0mm (8.00" x 5.00" x 1.57")

Documentation

For further information click the link or scan the code

→ xppower.com

Models & ratings

Model number[1,2]	Output power	Output voltage	Output current	Standby output	Efficiency[3]
UCH750PS12C2	750W	12.0V	62.50A	5V 2.0A	95%
UCH750PS24C2		24.0V	31.25A		95.5%
UCH750PS36C2		36.0V	20.83A		96%
UCH750PS48C2		48.0V	15.62A		96%
UCH750PS54C2		54.0V	13.88A		96%

Notes:

1. For class I version, remove C2 to the end of the part number, e.g. UCH750PS12.
2. For covered version, add suffix –C to the end of the part number, e.g. UCH750PS12-C, UCH750PS12C2-C
3. Typical value at 230VAC input and 750W load at +25°C ambient.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage - operating	90		264	VAC	Derate from 100% load at 100VAC to 90% load at 90VAC
Input frequency	47		63	Hz	
Power factor		≥0.9			230VAC, 100% load. EN61000-3-2 class A
Input current - full load			9.2	A	100 VAC, 100% load
Inrush current			60	A	230 VAC cold start, +25°C
Earth leakage current			1	mA	264 VAC/60Hz (max)
No load input power			0.21	W	230VAC, remote off
Input protection	T16A/250V Internal fuse fitted in line and neutral.				
Overvoltage category	OVC III up to 3000m, OVC II up to 5000m				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage - V1	12		54	VDC	See models and ratings table
Initial set accuracy			±2	%	50% load, 115/230VAC
			±3		5V standby, 50% load, 115/230VAC
Minimum load	0			A	No minimum load required
Start up delay			3	s	115/230VAC full load.
			100	ms	5V standby at 115/230VAC
Hold up time	10			ms	115VAC at full load
Rise time			50	ms	
Line regulation			0.5	%	From high line to low line, full load
			1		5V standby, from high line to low line full load
Load regulation			1	%	From 0% to 100% load
			5		5V standby: from 0% to 100% load
Transient response			4	%	Recovery within 1% in less than 500µs for a 50-75% and 75-50% load step
Over/undershoot			5	%	Full load
Ripple & noise			2/1	% pk-pk	5V standby: 100mVp-p max. 12V/others measured with 20MHz bandwidth and 47µF electrolytic capacitor in parallel with 0.1µF ceramic capacitor at +25°C
Overvoltage protection	105		130	%	Vnom, 48V model OVP <60V & 54V model can only meet ES2 , recycle input to reset
	150		180		5V standby, at 50% load, recycle input to reset
Overload protection	120		150	% Inom	Auto recovery
			3	A	5V standby, auto recovery
Short circuit protection	Trip & restart				
Temperature coefficient			0.02	%/°C	
Overtemperature protection	Measured internally, auto resetting				
Remote On/Off	Output is on if remote on/off (pin3) is floating or connected to 5V standby (pin1). Output is off if remote on/off (pin 3) is connected to GND (pin 2)				

UCH750 series

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency		95		%	230VAC, full load
Isolation: input to output	4000			VAC	2 x MOPP
input to ground	1500			VAC	1 x MOPP
output to ground	1500			VAC	1 x MOPP
Switching frequency	30		100	kHz	PFC, varies with input at full load
		80			Main converter
Patient leakage current			100	µA	264VAC/60Hz
Power density			0.72 (11.9)	W/cm³ (W/in³)	
Mean time between failure	300			khrs	Telcordia SR-332, +25°C
Weight		1270 (2.8)		g (lb)	UCH750PSxx
		1350 (2.98)			UCH750PSxx-C

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-20		+70	°C	Derate from 100% load at +50°C to 50% load at +70°C. Safety approval at +50°C only.
Storage temperature	-40		+80	°C	
Cooling					Convection cooled
Operating humidity	20		80	%RH	Non-condensing
Storage humidity	10		90	%RH	Non-condensing
Operating altitude			5000	m	
Shock	±3 x 30g shocks in each plane, total 18 shocks. 30g = 11ms (±0.5msecs), half sine. Conforms to EN60068-2-27				
Vibration	Single axis 10-500Hz at 2g sweep and endurance at resonance in all 3 planes. Conforms to EN60068-2-6				

EMC: Emissions

Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	Class B	
Radiated	EN55032	Class B	
Harmonic currents	EN61000-3-2	Class A	Class C for Load >150W
Voltage flicker	EN61000-3-3		

EMC: immunity

Phenomenon	Standard	Test level	Criteria	Notes & conditions
Medical device EMC	IEC60601-1-2	Ed. 4.1: 2014		
ITE device EMC	EN55035	High severity level		
ESD immunity	EN61000-4-2	±8kV contact , ±15kV Air	A	
Radiated immunity	EN61000-4-3	10V/m	A	
EFT	EN61000-4-4	±2kV	A	
Surge	EN61000-4-5	Installation class 3	A	±1kV line to line , ±2kV line to earth
Conducted	EN61000-4-6	10Vrms	A	
Magnetic field	EN61000-4-8	30A/m	A	
Dips and interruptions	EN55035 (115VAC)	Dip >95% (0VAC), 10ms	A	
		Dip 30% (80.5VAC), 500ms	B	
		Int >95% (0VAC), 5000ms	B	
	EN55035 (230VAC)	Dip >95% (0VAC), 10ms	A	
		Dip 30% (161VAC), 500ms	B	
		Int >95% (0VAC), 5000ms	B	
	IEC60601-1-2 (100VAC)	Dip >95% (0VAC), 10ms	A	
		Dip >95% (0VAC), 20ms	B	
		Dip 30% (70VAC), 500ms	B	
		Int >95% (0VAC), 5000ms	B	
	IEC60601-1-2 (240VAC)	Dip >95% (0VAC), 10ms	A	
		Dip >95% (0VAC), 20ms	B	
		Dip 30% (168VAC), 500ms	B	
		Int >95% (0VAC), 5000ms	B	

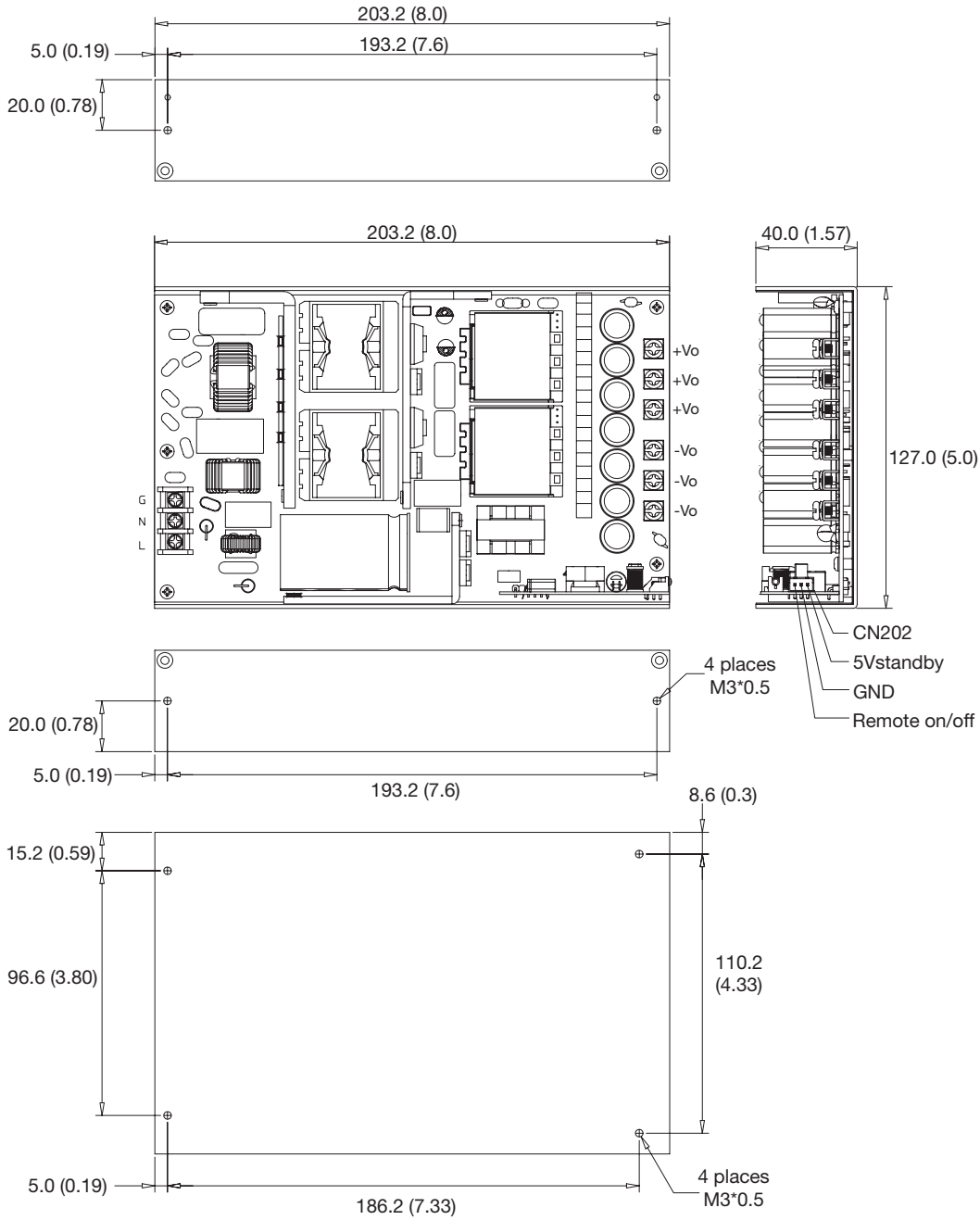
Safety approvals

Certification	Standard	Notes & conditions
CB report	IEC62368-1	Audio/video, information and communication technology equipment
	IEC60601-1 Ed 3.1 Including Risk Management	Medical
UL	UL62368-1	Audio/video, information and communication technology equipment
	ANSI/AAMI ES60601-1 & CSA C22.2 No.60601-1	Medical
TUV	EN62368-1	Audio/video, information and communication technology equipment
	EN60601-1	Medical
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

	Means of protection	Notes & conditions
Primary to Secondary	2 x MOPP (Means of Patient Protection)	IEC60601-1 Ed.3
Primary to Earth	1 x MOPP (Means of Patient Protection)	
Secondary to Earth	1 x MOPP (Means of Patient Protection)	

Mechanical details

UCH750PSxx

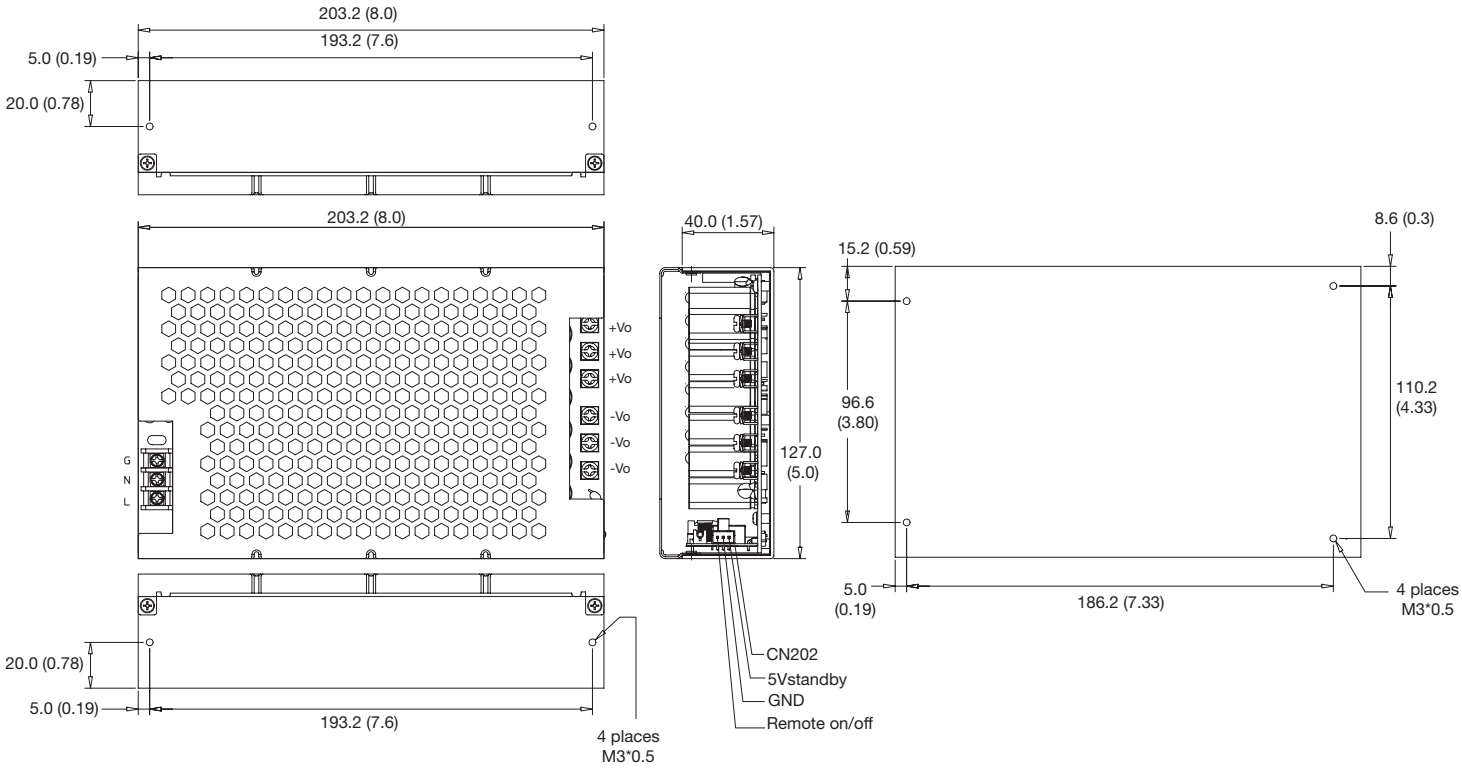


Notes:

1. All dimensions shown in mm (inches). Tolerance: ±0.5 (0.02).
2. Weight: -U versions: 1270g (2.8lb) approx.
3. C202 JST housing XHP-3, JST series SXH-002T-P0.6 crimp terminals
4. Input terminal screws are M3. DC output terminal screws are M5.
5. Input terminal screw maximum torque 0.5Nm (0.37lbs-ft).
6. DC output terminal screw maximum torque 0.69Nm (0.51lbs-ft).

Mechanical details

UCH750PSxx-C

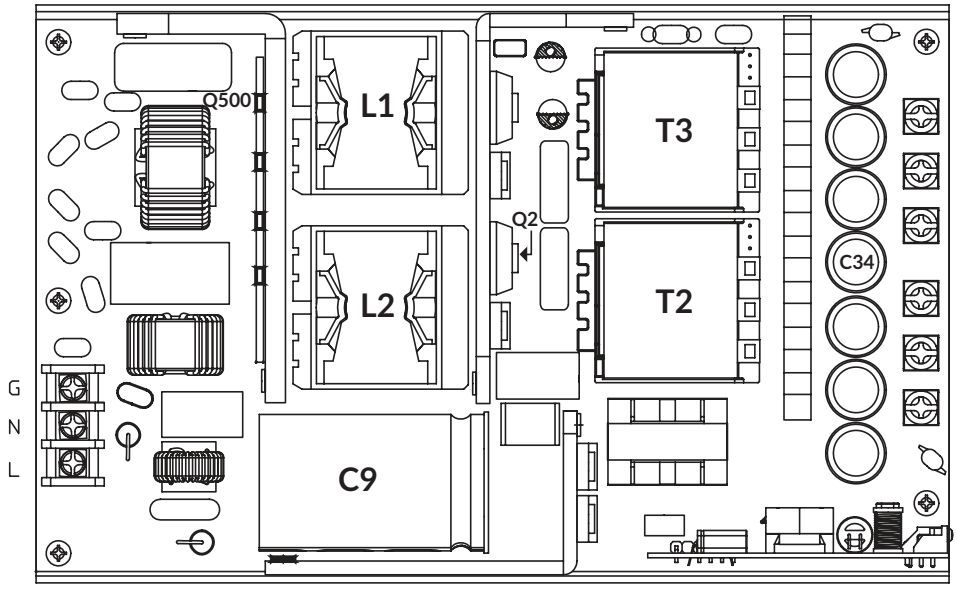


Notes:

1. All dimensions shown in mm (inches). Tolerance: ±0.5 (0.02).
2. Weight: -C versions: 1350g (2.98lb)
3. Mates with JST housing XHP-3, JST series SXH-002T-P0.6 crimp terminals
4. Input terminal screws are M3. DC output terminal screws are M5.
5. Input terminal screw maximum torque 0.5Nm (0.37lbs-ft).
6. DC output terminal screw maximum torque 0.69Nm (0.51lbs-ft).

Thermal considerations

Temperature measurements (at maximum ambient)	
Component	**Max temperature °C**
L1 & L2 coil	130°C
T2 & T3 coil	110°C
C9	105°C
C43	105°C
Q2	120°C
Q500	120°C

In order to ensure safe operation of the PSU in the end-use equipment, the temperature of the components listed in the table must not be exceeded.

Temperature should be monitored using K type thermocouples placed on the hottest part of the component (out of direct air flow).