

Features & Benefits

Universal ac input voltage(120-277VAC)

Compact design

93% high efficiency , low temperature rise

Ip20 rated case with silicone-based potting

All-round protection: SCP, OVP, OPP

UL Class2 output, Class P

Operating temperature: -35°C~+50°C

Comply with IEEE1789, UL8750

Model List

Model Name	Rated Input Voltage	Max Output Power(Total)	Output Current(Total)	Rated Output Voltage	Efficiency	Dimension
CVP-A1-060S012U-ND	120-277VAC	60W max.	0-5000mA	12VDC	90%	136*26*19.5 mm/ 5.3*1*0.7 in.
CVP-A1-060S024U-ND	120-277VAC	60W max.	0-2500mA	24VDC	92%	136*26*19.5 mm/ 5.3*1*0.7 in.
CVP-A1-060S036U-ND	120-277VAC	60W max.	0-1667mA	36VDC	92%	136*26*19.5 mm/ 5.3*1*0.7 in.
CVP-A1-060S048U-ND	120-277VAC	60W max.	0-1250mA	48VDC	93%	136*26*19.5 mm/ 5.3*1*0.7 in.

Approvals



CLASS P

Model name code

<u>CVP-A1</u>	-	<u>060</u>	<u>S</u>	<u>024</u>	<u>U</u>	-	<u>ND</u>
①		②	③	④	⑤		⑥

①	Series	Constant Voltage Series
②	Output power	Maximum output power: 60W
③	Output Channel	Single channel
④	Output Voltage(max)	output voltage: 24V
⑤	Input voltage	120-277VAC
⑥	Dimming Control	Non-dimming

Specification:

Parameters	Symbols	Test Conditions / Comment										Min	Typ	Max	Units
INPUT															
Input Voltage	V_{IN}											108		305	V_{AC}
Rated Input Voltage	$V_{IN\,RATED}$											120		277	V_{AC}
Input Frequency	f_{line}											47	50/60	63	Hz
Input Current	I_{IN}	Full Load, $V_{IN} = 120V_{AC}$												0.65	A
Inrush Current	I_{INRUSH}	Cold Start, $V_{IN} = 277V_{AC}$												70	A
Leakage Current	$I_{Leakage}$	$V_{IN} = 277V_{AC}$ 60Hz												0.75	mA
Number of Drivers per MCB(Circuit Breaker)	MCB type	B10	C10	D10	B13	C13	D13	B16	C16	D16	B20	C20	D20		
	120V _{AC}	7	11	13	9	15	17	12	18	21	15	23	26		
	277V _{AC}	3	6	12	4	8	16	5	9	19	7	12	24		

The graph displays the inrush current waveform for three different input voltages: 120VAC, 277VAC, and 347VAC. The y-axis represents current (I) and the x-axis represents time (t). The peak current is labeled I_{PK}, and the time to reach 10% of the peak current is labeled t. The 10% I_{PK} point is marked on the curve.

Input Voltage	Inrush Current	t(us)10%-10%
120VAC	28A	158
277VAC	65A	166
347VAC	NA	NA

General Characteristics

Power Factor	PF	20~100% load, $V_{IN} = 120V_{AC}$	0.9			PF
		60~100% load, $V_{IN} = 277V_{AC}$	0.9			
Total Harmonic Distortion	THD	20~100% load, $V_{IN} = 120V_{AC}$			20	%
		60~100% load, $V_{IN} = 277V_{AC}$			20	
Efficiency	η_{12V}	CVP-A1-060S012U-ND, Full load, $V_{IN} = 120V_{AC}$, Steady state	86	88		%
		CVP-A1-060S012U-ND, Full load, $V_{IN} = 277V_{AC}$, Steady state	89	90		
	η_{24V}	CVP-A1-060S024U-ND, Full load, $V_{IN} = 120V_{AC}$, Steady state	88	90		
		CVP-A1-060S024U-ND, Full load, $V_{IN} = 277V_{AC}$, Steady state	90	92		
	η_{36V}	CVP-A1-060S036U-ND, Full load, $V_{IN} = 120V_{AC}$, Steady state	88	90		
		CVP-A1-060S036U-ND, Full load, $V_{IN} = 277V_{AC}$, Steady state	90	92		
	η_{48V}	CVP-A1-060S048U-ND, Full load, $V_{IN} = 120V_{AC}$, Steady state	89	91		
		CVP-A1-060S048U-ND, Full load, $V_{IN} = 277V_{AC}$, Steady state	91	93		

Turn On Delay Time	T_{on_delay}	Cold Start			0.5	S
TBD			TBD			

OUTPUT

Output Voltage Tolerance	t_{OUT}				5	%
No Load Output Voltage Tolerance	$t_{NO\ LOAD}$	No Load,			3	%
Output Current	I_{OUT}	CVP-A1-060S012U-ND	0		5000	mA
		CVP-A1-060S024U-ND	0		2500	mA
		CVP-A1-060S036U-ND	0		1667	mA
		CVP-A1-060S048U-ND	0		1250	mA
Output Power	P_{OUT}				60	W
Line Regulation	$V_{OUT-LINE}$				1	%
Ripple Voltage	$V_{OUT-LINE}$	Full Load, (pk-to-pk)/Average, Without Dimmer			10	%
Output Voltage Overshoot	$V_{OVERSHOOT}$	Turning Power ON			10	%
12V Efficiency Curve TBD			24V Efficiency Curve TBD			
36V Efficiency Curve TBD			48V Efficiency Curve TBD			

Protection

Over Voltage Protection	V_{OVP}	CVP-A1-060S012U-ND, Latch mode.	14		18	V
		CVP-A1-060S024U-ND, Latch mode.	28		36	V
		CVP-A1-060S036U-ND, Latch mode.	38		44	V
		CVP-A1-060S048U-ND, Latch mode.	50		60	V
Over Current Protection	I_{OCP}	CVP-A1-060S012U-ND, Hiccup mode.	5000		5600	mA
		CVP-A1-060S024U-ND, Hiccup mode.	2500		3000	mA
		CVP-A1-060S036U-ND, Hiccup mode.	1667		2000	mA
		CVP-A1-060S048U-ND, Hiccup mode.	1250		1500	mA
Over Power Protection	CC/CV mode.					
Short Circuit Protection	The unit can recover automatically after fault conditions is removed.					

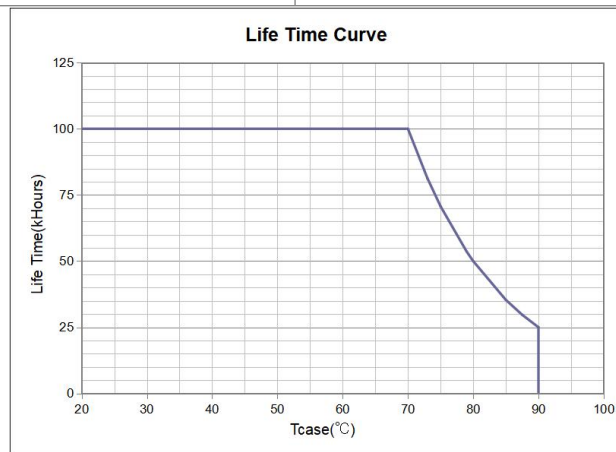
Environment

Storage Temperature	$T_{Storage}$	Humidity: 5% RH to 95% RH	-40	-	+85	°C
Ambient Operating Temperature	T_a		-35	-	+50	°C

Max. Case Temperature	T_c	Hot spot on case			90	°C
Operating Relative Humidity	H_a	Non-Condensing	10		90	%
Acoustic Noise		Measured from 1m away			24	dBA
Cooling	Convection Cooling					
IP Rating	IP20					

Others

Life Time	T_{Life}	Full Load, 80°C case temperature,	50			kHrs
MTBF	T_{MTBF}	Full Load, 25°C ambient temperature	200			kHrs
Net Weight	W_{NET}			TBD		g
Warranty	5 Years Warranty at $T_c \leq 80^\circ\text{C}$					
Flicker	IEEE 1789, Title 24					



Safety Compliance

CUL/UL	UL8750, CAN/CSA-C22.2 No. 250.13
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Electromagnetic Compliance

EMC Requirements	Standard	Conditions
EMI Emissions	FCC Title 47 Part 15B	Class B at 120VAC, Class A at 277VAC
Voltage Fluctuations and Flicker	IEC61000-3-3	
Immunity Compliance	IEC 61000-4-2	±8kV air Discharge, ±6kV Contact Discharge
	ANSI/IEEE C62.41.2	2 kV combination wave
	ANSI/IEEE C62.41.1-2002	2.5kV Ring Wave, test at 30Ω 7 Strikes/1 minute interval, Common and Differential mode, 56 total strikes
	IEC 61000-4-11	>95% dip, .5 period; 30% dip, 25 periods; 95% reduction, 250 periods
	IEC 61000-4-4	± 2kV Direct couple to Line input, 5kHz repetition rate, 15mS duration, 300mS period. 7 coupling paths, 1 minute per path (14 total combinations)

Note:

1. Unless otherwise specified, all the above parameters are measured at ambient temperature of 25°C and rated voltage.
2. Case must be grounded when installation

Packaging

Driver quantity (pcs)	Layer	Weight (kg)	Outer dimensions of Carton L*W*H(mm)
TBD	5	15.0	TBD

Mechanical Drawing:

