AC-DC Power Supplies Selection Guide

Single Output

Enclosed Type

Series	Released Year	Input Voltage	Output Power	Output Voltage Lineup	Features	Warranty (Year)
HWS-A	2013	100/200VAC	15/30/50/80/100/150W	3.3 to 48VDC	Flagship model, High efficiency, Long service life	5
HWS	2005	100/200VAC *1800W：3-phase 200VAC	300/600/1000/1500/1800W	3.3 to 60VDC	Full function flagship model, High efficiency, Long service life	5
HWS-A/HD	2013	100/200VAC	30/50/100/150W	3.3 to 48VDC	High environment-resistant type, MIL-STD-810F compliant	5
HWS/HD	2005	100/200VAC *1800W：3-phase 200VAC	300/600/1000/1500/1800W	3.3 to 60VDC	High environment-resistant type, MIL-STD-810F compliant	5
RWS-B NEW	2017	100/200VAC	50/100/150/300/600/1000/1500W	5 to 48VDC	Simple function model, Long service life	5
HMS NEW	2015	80 to 370VDC & 100/200VAC	50/80/100/150W	5 to 48VDC	Usable for DC and AC lines, Optimal for power plant control equipment and uninterruptible power supplies	5
HFE	2011	100/200VAC	1600/2500W	12 to 48VDC	Front end power supply, Ultra-high power density/high efficiency, 1U rack mount, Optional PMBus compatible model available	3
RTW	2003	100/200VAC	50/100/150/300W	3.3 to 48VDC	Ultra-thin, Convection cooling model	5
MS	1985	90 to 165VDC & 100VAC	30/50/100/150/300W	2 to 48VDC	Long service life, High reliability, Optimal for power plant control equipment and uninterruptible power supplies	3
FPS	2005	100/200VAC	1000W	12 to 48VDC	Front end power supply, 1U rack mount	2
RKE	2002	100/200VAC	1500W	24 to 48VDC	Front end power supply, High power density	5

PCB Type

Series	Released Year	Input Voltage	Output Power	Output Voltage Lineup	Features	Warranty (Year)
ZWS-B	2012	100/200VAC	10/15/30/50/75/100/150W	3.3 to 48VDC	Abundant product lineup, Without harmonic current suppression circuit	5
ZWS-BAF	2010	100/200VAC	50/75/100/150/300W	3.3 to 48VDC	Compliant with harmonic current regulations, High efficiency	5
ZWS-RC NEW	2017	100/200VAC	240W	24VDC	Compliant with the safety standard EN62477-1(OVC Ⅲ)	5
VS-E	2008	100VAC only	50/75/100/150W	3.3 to 48VDC	Exclusively for 100V AC input, Adopts a double-sided PCB	5
VS-C	1995	100VAC only	10/15/30W	3.3 to 48VDC	Exclusively for 100V AC input	2

DIN Rail Mount

Series	Released Year	Input Voltage	Output Power	Output Voltage Lineup	Features	Warranty (Year)
DRJ NEW	2015	100/200VAC	15/30/50/100W	5 to 24VDC	Standardized to 75mm in height, Block terminal and European terminal (spring type) models are available	5
DLP	2004	100/200VAC	75/100/120/180/240W	24VDC	Standardized to 97mm in height, Block terminal and European terminal (screw type) models are available	3

On Board Power Module

Series	Released Year	Input Voltage	Output Power	Output Voltage Lineup	Features	Warranty (Year)
KWS-A NEW	2015	100/200VAC	5/10/15/25W	5 to 24VDC	No need for external components (fuse, electrolytic capacitor, etc.), Small size	3
PFE-SA NEW	2013	100/200VAC	300/500/700W	12 to 51VDC	Conduction cooling, Full brick size	5
PFE-FA NEW	2016	100/200VAC	1000W	12 to 48VDC	Conduction cooling, High efficiency	5
PFE-F	2008	100/200VAC	500W	12 to 48VDC	Conduction cooling, High efficiency	2
PF-A	1993	100/200VAC	500/1000W	360VDC	Conduction cooling	2
KWD	1992	100/200VAC	5/10/15W	± 12, ± 15VDC	Dual output, On-board type	1

Multi Output

Enclosed Type PCB Type

Series	Released Year	Input Voltage	Output Power	Output Channels	Features	Warranty (Year)
ZWD-PAF	2004	100/200VAC	100/150/225W	2	PCB type, 5VDC and 24VDC output models, Have peak power capability	2
JWT	1999	100/200VAC	75/100W	3	Enclosed type, Compliant with harmonic current regulations	3
MTW	2006	100/200VAC	15/30/60W	3	PCB type, Ultra-thin	3
LWT-H	1994	100/200VAC	15/30/50W	3	Enclosed type	2

AC-DC Power Supplies Selection Guide

Multi Output — Enclosed Type PCB Type

Series	Released Year	Input Voltage	Output Power	Output Channels	Features	Warranty (Year)
ZWQ 	2000	100/200VAC	80/130W	4	PCB type, Enhanced output power during forced air cooling	1
ZWX 	2008	100/200VAC	180/240/300W	5 or 6	Fan less, For board computers for industrial equipment	3

Single Output — Peak Power Capability

Series	Released Year	Input Voltage	Output Power	Output Voltage Lineup	Features	Warranty (Year)
ZWS-BP 	2012	100/200VAC	150/240W	24 to 48VDC	200% peak power capability	5
HWS-P 	2008	100/200VAC	300/600W	24 to 48VDC	300% peak power capability *With 200VAC input	5
VS-P 	2005	100VAC only	50/75/100/150W	24VDC	200% peak power capability	2

For Medical Instruments

Series	Released Year	Input Voltage	Output Power	Output Voltage Lineup	Features	Warranty (Year)
RWS-B/ME  NEW	2017	100/200VAC	1000/1500W	12 to 48VDC	Approved by medical standard (compliant with IEC60601-1 Ed.3), Input-output: 2xMOPP	5
CME 	2008	100/200VAC	150/240W	24VDC	Approved by medical standard, Input-output: 2xMOOP	3
HWS-A/ME 	2013	100/200VAC	30/50/100/150W	5 to 48VDC	Approved by medical standard, Input-output: 2xMOOP, High efficiency	5
HWS/ME 	2005	100/200VAC	300/600/1000/1500W	5 to 48VDC	Approved by medical standard, Input-output: 2xMOOP	5
EFE 	2009	100/200VAC	300W	12/24VDC	Front end power supply, Digitally controlled, Approved by medical standard, Input-output: 2xMOPP	3

Simple Constant Current Control

Series	Released Year	Input Voltage	Output Power	Output Voltage Lineup	Features	Warranty (Year)
EVS  NEW	2015	100/200VAC	300/600W	18 to 57VDC	Optimal for simple constant current applications, such as charging of storage batteries or electrolysis of water Backflow prevention module（RP-60-20）is available	5
HWS-L/BAT 	2012	100/200VAC	600/1000W	36/60VDC		5

For LED Application

Series	Released Year	Input Voltage	Output Power	Output Voltage Lineup	Features	Warranty (Year)
ELC 	2013	100/200VAC	12/50/90W	18 to 130VDC	IP66 rated（dust tight and protected against heavy water jet spray）, Constant current type	3
ELV 	2013	100/200VAC	12/60/90W	12/24VDC	IP66 rated（dust tight and protected against heavy water jet spray）, Constant voltage type	3

Linear Power Supply

Series	Released Year	Input Voltage	Output Power	Output Voltage Lineup	Features	Warranty (Year)
NNS 	1991	100/200VAC	15/30/50W	5 to 24VDC	Low ripple noise, Single output	2
NND 	1991	100/200VAC	15/30W	+12 to +15, -12 to -15VDC	Low ripple noise, Dual output	2

Programmable Power Supplies (CVCC) Selection Guide

Series	Images	Released Year	Outline	Input Voltage	Output Power	Output Voltage Lineup	Features	Warranty (Year)
Genesys		2004	19inch half rack mount (1U)	Single-phase 100/200VAC	750W	6 to 600VDC	Built-in RS232C/RS485 interface Interface option: GPIB/Isolated analog board UL60950-1 Certified	5
			19inch full rack mount (1U)	Single-phase 100/200VAC	1500W			
				Single-phase 200VAC, 3-phase 200VAC	2400W	8 to 600VDC		
			19inch full rack mount (2U)	Single-phase 200VAC, 3-phase 200VAC, 3-phase 400VAC	3300W			
				3-phase 200VAC, 3-phase 400VAC	5000W			
Z+		2012	Height 2U, Bench top	Single-phase 100/200VAC	200/400/600/800W	10 to 650VDC	Low ripple and noise, Output voltage/current programming function(sequence creation), UL61010-1 certified, Built-in USB/RS232C/RS485 interface, Interface option : LAN/GPIB/ Isolated analog board/Front panel output jacks	5
ZUP		2000	Height 3U, Bench top	Single-phase 100/200VAC	200/400/800W	200/400W Model : 6 to 120VDC 800W Model : 6 to 60VDC	Built-in RS232/RS485 interface Interface option: Front panel output jacks/Separately sold GPIB unit UL3111-1/EN61010-1 Certified	3
EVA		2012	Enclosed type	Single-phase 200VAC	2400W	150 to 600VDC	Optimal for charging storage batteries (LiB,Pb,Ni-MH,etc.)	5

DC-DC Converters (Isolated Type) Selection Guide

Bus Converter

Input Voltage (Bus line Voltage)	Series	Released Year	Output Power	Output Voltage Lineup	Features	Warranty (Year)
280VDC	**PH-A280** NEW	2016	50/75/100/150/300W	3.3 to 48VDC	Flagship HVDC input power module, 1/4 or half brick size, Conduction cooling	5
	PAF	2004	450/600W	12 to 48VDC	Full brick size, Conduction cooling	2
110VDC	**CN-A**	2009	30/50/100/200W	5 to 24VDC	1/4 or half brick size, Conduction cooling, Best for railway related instruments	5
48VDC	**PAF**	2001	500/600/700W	3.3 to 28VDC	Full brick size, Conduction cooling	2
	iEA	2009	48/74.8/75/78W	5 to 28VDC	1/8 brick size, Convection cooling / Forced air-cooling	3
	iEE	2010	48/65/66W	5/12VDC	1/8 brick size, Convection cooling / Forced air-cooling	3
	iQE	2009	132/150/204W	5/12VDC	1/4 brick size, Convection cooling / Forced air-cooling	3
	iQL	2009	300/308W	12/28VDC	1/4 brick size, Convection cooling / Forced air-cooling	3
	iQG	2009	367.6/379.5W	11.5/11.8VDC	1/4 brick size, Convection cooling / Forced air-cooling	3
	PAE	2004	50/100W	1.8 to 5VDC	1/8 brick size, Convection cooling / Forced air-cooling	2
	PAQ	2001	50/100W	1.2 to 5VDC	1/4 brick size, Convection cooling / Forced air-cooling	2
	PAH	1999	50/75/100/150/200/300/350/450W	1.2 to 48VDC	1/2 brick size, Conduction cooling	2
24VDC	**PAF**	2001	500/600W	12/28VDC	Full brick size, Conduction cooling	2
	CN-A	2009	50/100W	5 to 24VDC	1/2 brick size, Conduction cooling, Best for railway related instruments	5
	iEA	2009	48W	12VDC	1/8 brick size, Convection cooling / Forced air-cooling	3
	iQE	2009	132W	12VDC	1/4 brick size, Convection cooling / Forced air-cooling	3
	iQL	2009	200/244W	5/11.6VDC	1/4 brick size, Convection cooling / Forced air-cooling	3
	PAH	1999	300/350W	12 to 48VDC	1/2 brick size, Conduction cooling	2

Enclosed type

Input Voltage	Model	Released Year	LV Side Rated Voltage (Range)	HV Side Rated Voltage (Range)	Maximum Output Power	Features	Warranty (Year)
48VDC ⇔ 320VDC ※ Bidirectional Converters	**EZA2500**	2012	48VDC (36 to 60VDC)	320VDC (300 to 380VDC)	2496W	Height 1U(19inch full rack), High Efficiency (94% Max.), RS485 Equipped	5
240VDC ⇔ 320VDC ※ Bidirectional Converters	**EZA11K** NEW	2017	240VDC (150 to 300VDC)	320VDC (240 to 400VDC)	11kW	Height 1U(19inch full rack), High Efficiency (95% Max.), RS485 Equipped	5

Input Voltage (Bus line Voltage)	Series	Released Year	Output Power	Output Voltage Lineup	Features	Warranty (Year)
110VDC 48VDC 24VDC	**RDS**	2010	30/50/60/100/180W	5 to 24VDC	Best for instruments related signal or vehicle of railway system and factory automation	5
80 to 370VDC & 100/200VAC *Usable for DC and AC lines	**HMS** NEW	2015	50/80/100/150W	5 to 48VDC	Usable for DC and AC lines, Optimal for power plant control equipment and uninterruptible power supplies	5

DC-DC Converters Selection Guide

Isolated Type

Input Voltage	Series	Released Year	Output Power	Output Voltage Lineup	Features	Warranty (Year)
12/24VDC 24/48VDC	**CCG** NEW	2016	15/30W	3.3 to 15VDC	1 × 1 inch size, Wide input voltage range, Six-side shielded type, Convection cooling	5
24VDC	**CC-P-E**	2009	15/30W	3.3 to 15VDC	Ultra-compact metal shielded type, Convection cooling	5
3.3VDC 5VDC 12VDC 24VDC 48VDC	**CC-E**	2005	1.5/3/6/10W	Single output 3.3 to 12VDC Dual output ± 12VDC	Ultra-compact metal shielded type, Convection cooling * Dual output models are also available.	5
5VDC 12VDC 24VDC 48VDC	**PV**	1999	1.5/3W	3.3 to 12VDC	Single in-line type, Convection cooling	3
5VDC 12VDC 24VDC 48VDC	**PVD**	1999	1.5/3W	± 12VDC	Single in-line type, Convection cooling, Dual output model	3

Non-isolated Type

Input Voltage	Series	Released Year	Output Power	Output Voltage Lineup	Features	Warranty (Year)
9 to 40VDC 9 to 53VDC	**i6A** NEW	2017	10/14/20A	3.3 to 40VDC 3.3 to 24VDC 3.3 to 15VDC	1/16 brick size, Wide input & Wide output, High efficiency	3
8 to 14VDC	**iJB** NEW	2014	60A	0.6VDC	High output current of 60A, Fully digitally controlled POL converter, High accuracy of voltage setting and fast response	3
8 to 14VDC	**iJC** NEW	2016	100A	0.6VDC	High output current of 100A, Fully digitally controlled POL converter, High accuracy of voltage setting and fast response	3
2.4 to 5.5VDC 4.5 to 14VDC	**iCF**	2009	3A	0.6/0.7VDC	Fast response, Footprint "LGA" / "EPC"	3
2.4 to 5.5VDC 4.5 to 14VDC	**iCG**	2012	6A	0.6/0.7VDC	Fast response, Footprint "LGA" / "EPC"	3
2.4 to 5.5VDC 4.5 to 14VDC	**iBF**	2009	12A	0.6/0.7VDC	Fast response, Footprint "LGA" / "EPC"	3
2.4 to 5.5VDC 4.5 to 14VDC	**iAF**	2009	20A	0.6/0.7VDC	Fast response, Footprint "LGA" / "EPC"	3
8 to 14VDC	**PML**	2012	30/50A	0.7VDC	High efficiency	3
3 to 3.6VDC 3 to 5.5VDC	**CE-09**	1999	40/50/600/1200mA	Single output 2/3.3VDC Dual output ± 12/ ± 15VDC	SMD type *Dual output models are also available.	1
Vout+4 to 16VDC 3 to 5.25VDC 9 to 26.4VDC	**CE-10**	2002	1500/2500mA	1.5 to 3.3VDC 3.3 to 5VDC 0.9 to 3.3VDC 3.3 to 12.6VDC	SMD type	1
10 to 60VDC 10 to 53VDC	**CE-50**		300/500mA	+5VDC	Single in-line type	1

For use	Type	Images	Input Voltage	Output Channels	Output Current	Maximum Output Voltage	Analog Dimming	PWM Dimming	Features
For LED Backlight of Liquid Crystal Panel	**ALD-214012PJ111**		10.8 to 13.2VDC	2	140mA	44VDC	○	○	High efficiency type
	ALD-214012PJ132		10.8 to 13.2VDC	2	140mA	44VDC	○	○	Low noise type
	ALD-414012PJ126		10.8 to 13.2VDC	4	140mA	44VDC	○	○	High efficiency type
	ALD-414012PJ133		10.8 to 13.2VDC	4	140mA	44VDC	○	○	Low noise type
	ALD-514012PJ134		10.8 to 13.2VDC	5	140mA	44VDC	○	○	