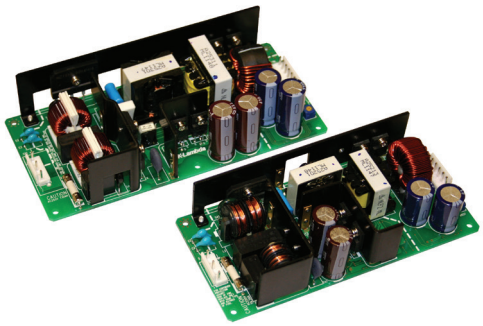
https://product.tdk.com/en/power/zws-bp
www.emea.lambda.tdk.com/zws-bp

150 to 240W High Reliability Power Supplies with 200% Peak Power



Industrial Test COMM

The ZWS-BP industrial grade power supplies are used in a wide range of applications where equipment down-time cannot be tolerated during years of operation. Globally, process control, test and measurement equipment, machinery, semiconductor fabrication, communications and printer manufacturers depend upon the ZWS-BP to provide a reliable source of power. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of up to 10 years. They are available in 150W or 240W power levels (each with a 200% peak power capability for up to 5 seconds with a 40% duty cycle) with a choice of 24V, 36V and 48V outputs. A variety of mechanical configurations are available, in addition to a double sided board coating option.

Features	Benefits
• Up to 200% Peak Power Capability	• Suitable for Powering Capacitive, Inductive and Thermal Printer Loads
• 10 Year Electrolytic Capacitor Lifetimes	• Improved Field Life
• Convection Cooled	• Reduced Dirt and Dust Contamination
• 5 year Warranty	• Low Cost of Ownership

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Output Power (W)	Peak Current (A)	Peak Power (W)(1)	Efficiency (Typ) (%) (100/200Vac)
ZWS150BP-24	24	21.6 - 26.4	6.3	151.2	12	288	87 / 90
ZWS240BP-24	24	21.6 - 26.4	10	240	20	480	88 / 91
ZWS150BP-36	36	32.4 - 39.6	4.2	151.2	8	288	87 / 90
ZWS240BP-36	36	32.4 - 39.6	6.7	241.2	13.4	482.4	88 / 91
ZWS150BP-48	48	39.6 - 52.8	3.2	153.6	6	288	87 / 90
ZWS240BP-48	48	39.6 - 52.8	5	240	10	480	88 / 91

ZWS	240	BP	-	24	/	
	Nominal power: 150, 240			Output voltage: 24, 36, 48		

Suffix	Description	Models
Blank	Open frame, JST connectors	ZWS150 - 240BP
/A	L-bracket, cover, JST connectors	ZWS150 - 240BP
/L	L-bracket, JST connectors	ZWS150 - 240BP
/CO2	Double sided PCB coating	ZWS150 - 240BP
/R	Remote on/off	ZWS150 - 240BP
/T	Screw terminal connections	ZWS240BP
/TA	Screw terminals, L bracket & cover	ZWS240BP

Preferred option

Option combinations are available, please contact your local sales office

Specifications

Model		ZWS150BP	ZWS240BP
Input			
Input Voltage range[2]	Vac	85 - 265	
Input Frequency	Hz	47 - 63	
DC Input Voltage Range[3]	Vdc	120 - 370	
Input Current (100/200Vac)	A	1.9 / 0.95	2.8 / 1.5
Inrush Current at 200Vac (typ) (Cold Start)	A	30	
Leakage Current	mA	<0.5	
Power Factor (100/200Vac)	-	0.98/0.93	
Harmonic Compliance	-	Meets IEC61000-3-2	
Hold Up Time (typ) at 100Vac, 100% load	ms	20	
Efficiency	-	See Model Selector Table	
Conducted & Radiated EMI	-	EN55011 / EN55032-B, FCC-B, VCCI-B	
Immunity	-	IEC61000-6-2, EN61000-4-2 , -3, -4, -5, -6, -8, -11	
Insulation Class	-	Class I	
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, 60950-1, EN50178 (OV II), CE Mark and UKCA Mark	

Immunity

Test	Standard	Test Level	Criteria	Notes
ESD	EN61000-4-2	Air ± 8kV and contact ± 4kV	A	See IEC61000 immunity test report on website
Radiated Susceptibility	EN61000-4-3	80M -1GHz: 10V/m 1.4 - 2.0GHz: 3V/m 2.0 - 2.7GHz: 1V/m	A	
Electrical Fast Transient Burst	EN61000-4-4	± 2kV	A	
Surge	EN61000-4-5	Normal ± 2kV Common ± 4kV	A	
Conducted Susceptibility	EN61000-4-6	10Vrms	A	
Magnetic Fields	EN61000-4-8	30A/m	A	
Voltage Dips	EN61000-4-11	30% 500ms 60% 200ms 100% 20ms 100% 5000ms	B B B B	

Specifications

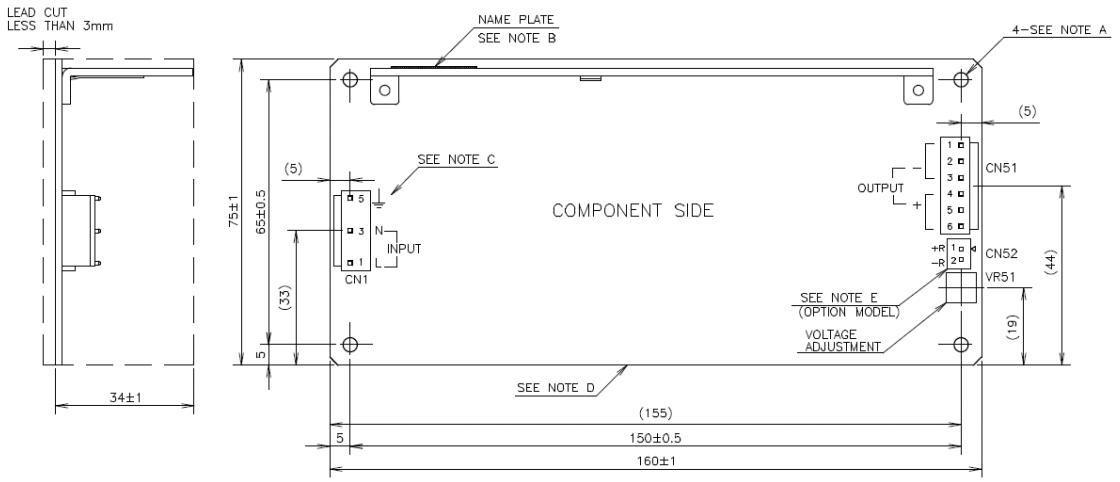
Model		ZWS150BP	ZWS240BP
Output			
Output Voltage Adjustment	-	See Model Selector Table	
Switching Frequency (Main converter)	kHz	120	
Line Regulation	mV	24V: 96, 36V: 144, 48V: 192	
Load Regulation	mV	24V: 192, 36: 288, 48V: 384	
External Load Capacitance	-	Not applicable	
Ripple & Noise	mV	24V: 240, 36V: 360, 48V: 480	
Temperature Coefficient	%/°C	0.02	
Minimum Load	-	No minimum load required	
Overcurrent Protection	%	>101 of peak current capability (constant current style)	
Overvoltage Protection	V	24V: 28.8 - 33.6, 36V: 41.4 - 48.6, 48V: 55.2 - 64.8	
Remote Sense	-	-	
Remote On/Off	-	Optional, see part numbering scheme	
Parallel Operation	-	Not possible	

Specifications

Model		ZWS150BP	ZWS240BP
Environmental			
Operating Temperature(4) (Convection Cooling)	°C	ZWS150BP: -10 to +70, derate linearly from 100% to 50% load from 50 to 70 ZWS240BP: -10 to +70, derate linearly from 100% to 30% load from 50 to 70	
Operating Temperature(4) (Forced Air Cooling)	°C	ZWS150BP: -10 to +70, derate linearly from 100% to 70% load from 60 to 70 ZWS240BP: -10 to +70, derate linearly from 100% to 70% load from 60 to 70	
Storage Temperature	°C	-30 to +75	
Humidity (non condensing)	%RH	30 - 90 Operating, 10 - 90 storage	
Cooling	-	Convection. (Forced air will reduce derating at high ambient temperatures)	
Altitude	m	3,000	
Withstand Voltage (For 1 minute)	Vac	Input to Ground 2,000, Input to Output 3,000, Output to Ground 500 for 1 minute	
Isolation Resistance	MΩ	>100 at 25°C, 70%RH & 500VDC	
Vibration (Non operating)	-	10-55Hz (Sweep for 1min.) 19.6m/s^2 Constant X,Y,Z 1 hour each	
Shock (Non operating)	-	Less than 196m/s^2	
Other			
Weight (Typ) (Open frame models)	g	360	520
Size (LxWxH) (Open frame models)	mm	160 x 75 x 37	180 x 84 x 42
Size (LxWxH) (Open frame models	Inches	6.3 x 2.95 x 1.46	7.09 x 3.31 x 1.65
Connectors	-	JST or optional screw terminals for ZWS240BP, see part numbering scheme	
MTBF - JEITA RCR-9102B(5)	Hours	217,836	197,152
Warranty	Years	5	

Notes:
See website for detailed specifications, test methods and installation manual
(1) See instruction manual for peak power and duty cycle information. Average power not to exceed maximum power ratings
(2) Derate linearly to 80% load from 90 to 85Vac input
(3) Safety certified for AC input only
(4) See Instruction manual for further details and mounting orientations
(5) Component count method, ground fixed. Note the JEITA RCR-9102B calculation method produces figures significantly lower than Telcordia

Outline Drawing ZWS150BP (Open Frame)



CONNECTORS USED:

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
PIN HEADER (INPUT SIDE CN1)	B3P5-VH	JST	1
PIN HEADER(OUTPUT SIDE CN51)	B6P-VH	JST	1

*OUTPUT CURRENT OF EACH CONNECTOR PIN MUST BE LESS THAN 5A.

MATCHING HOUSINGS, PINS & TOOL (NOT INCLUDED WITH THE PRODUCT):

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
SOCKET HOUSING (CN1)	VHR-5N	JST	1
SOCKET HOUSING (CN51)	VHR-6N	JST	1
TERMINAL PINS	SVH-21T-P1.1	JST	9
	BVH-21T-P1.1		
HAND CRIMPING TOOL	YC-160R	JST	-

NOTES

A: 4-ø3.5 HOLES ARE FOR CUSTOMER'S CHASSIS MOUNTING HOLES. ALL MUST BE SCREWED IN ORDER TO CONFORM THE VIBRATION SPEC.

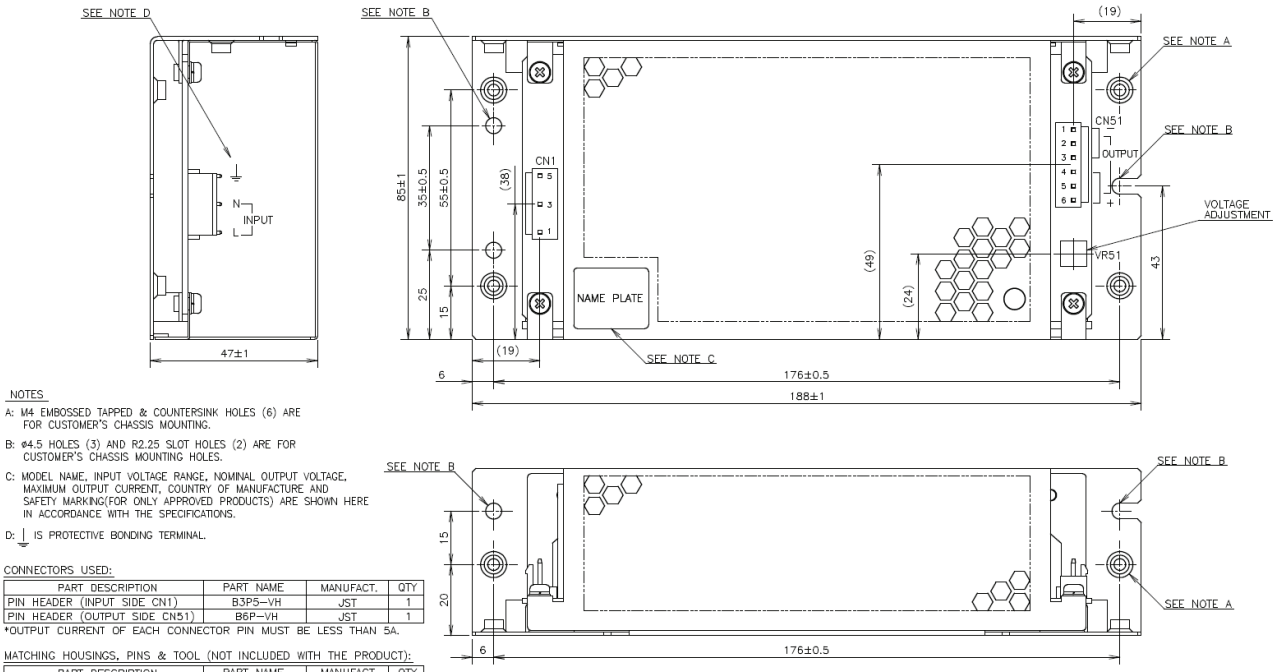
B: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND SAFETY MARKING(FOR ONLY APPROVED PRODUCTS) ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.

C: ⏚ IS PROTECTIVE BONDING TERMINAL.

D: TO KEEP THE DISTANCE MORE THAN 4mm BETWEEN PCB EDGE AND CUSTOMER'S CHASSIS.

E: OPTION MODEL(ZWS150BP-*/R)
REMOTE ON/OFF CONTROL CONNECTOR (CN52) : B2B-XH-AM (JST)
MATCHING HOUSING : XHP-2 (JST)
MATCHING TERMINAL : BXH-001T-P0.6 (JST) OR SXH-001T-P0.6 (JST)
HAND CRIMPING TOOL : YC-110R (JST) OR YRS-110 (JST)
MATCHING HOUSING AND TERMINAL --- NOT INCLUDED WITH THE PRODUCT

Outline Drawing ZWS150BP/A



NOTES

A: M4 EMBOSSED TAPPED & COUNTERSINK HOLES (6) ARE FOR CUSTOMER'S CHASSIS MOUNTING.

B: ø4.5 HOLES (3) AND R2.25 SLOT HOLES (2) ARE FOR CUSTOMER'S CHASSIS MOUNTING HOLES.

C: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND SAFETY MARKING(FOR ONLY APPROVED PRODUCTS) ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.

D: ⏚ IS PROTECTIVE BONDING TERMINAL.

CONNECTORS USED:

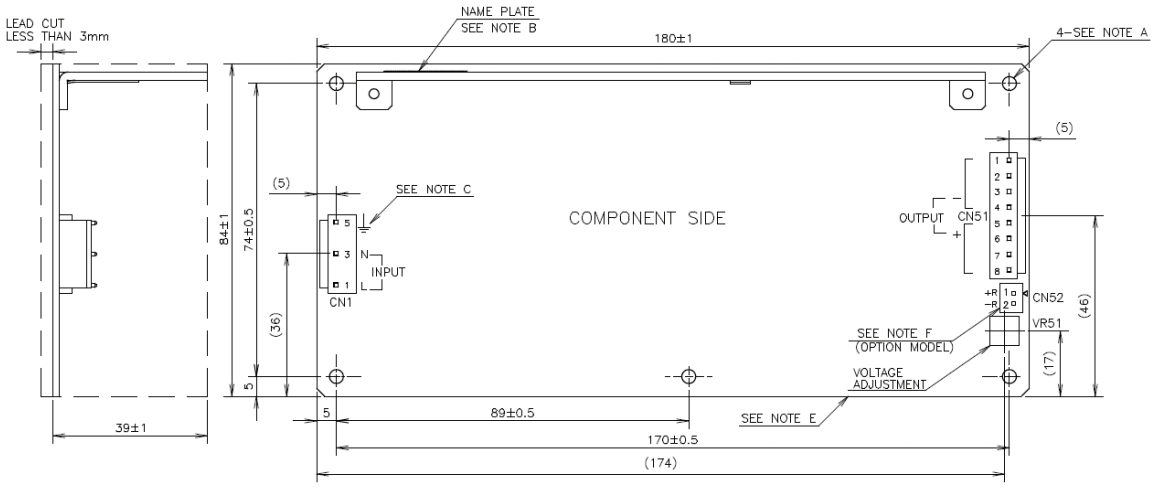
PART DESCRIPTION	PART NAME	MANUFACT.	QTY
PIN HEADER (INPUT SIDE CN1)	B3P5-VH	JST	1
PIN HEADER (OUTPUT SIDE CN51)	B6P-VH	JST	1

*OUTPUT CURRENT OF EACH CONNECTOR PIN MUST BE LESS THAN 5A.

MATCHING HOUSINGS, PINS & TOOL (NOT INCLUDED WITH THE PRODUCT):

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
SOCKET HOUSING (CN1)	VHR-5N	JST	1
SOCKET HOUSING (CN51)	VHR-6N	JST	1
TERMINAL PINS	SVH-21T-P1.1	JST	9
	BVH-21T-P1.1		
HAND CRIMPING TOOL	YC-160R	JST	-

Outline Drawing ZWS240BP (Open Frame)



CONNECTORS USED:

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
PIN HEADER (INPUT SIDE CN1)	B3P5-VH	JST	1
PIN HEADER(OUTPUT SIDE CN51)	B8P-VH	JST	1

*OUTPUT CURRENT OF EACH CONNECTOR PIN MUST BE LESS THAN 5A.

MATCHING HOUSINGS, PINS & TOOL (NOT INCLUDED WITH THE PRODUCT):

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
SOCKET HOUSING (CN1)	VHR-5N	JST	1
SOCKET HOUSING (CN51)	VHR-8N	JST	1
TERMINAL PINS	SVH-21T-P1.1	JST	11
	BVH-21T-P1.1		
HAND CRIMPING TOOL	YC-160R	JST	—

NOTES

A: 4-ø3.5 HOLES ARE FOR CUSTOMER'S CHASSIS MOUNTING HOLES. ALL MUST BE SCREWED IN ORDER TO CONFORM THE VIBRATION SPEC.

B: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND SAFETY MARKING(FOR ONLY APPROVED PRODUCTS) ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.

C: ⏚ IS PROTECTIVE BONDING TERMINAL.

D: TO KEEP THE DISTANCE MORE THAN 4mm BETWEEN PCB EDGE AND CUSTOMER'S CHASSIS.

E: OPTION MODEL(ZWS240BP-*/R)
REMOTE ON/OFF CONTROL CONNECTOR (CN52) : B2B-XH-AM (JST)
MATCHING HOUSING : XHP-2 (JST)
MATCHING TERMINAL : BXH-001T-P0.6 (JST) OR SXH-001T-P0.6 (JST)
HAND CRIMPING TOOL : YC-110R (JST) OR YRS-110 (JST)
MATCHING HOUSING AND TERMINAL --- NOT INCLUDED WITH THE PRODUCT

Outline Drawing ZWS240BP/TA

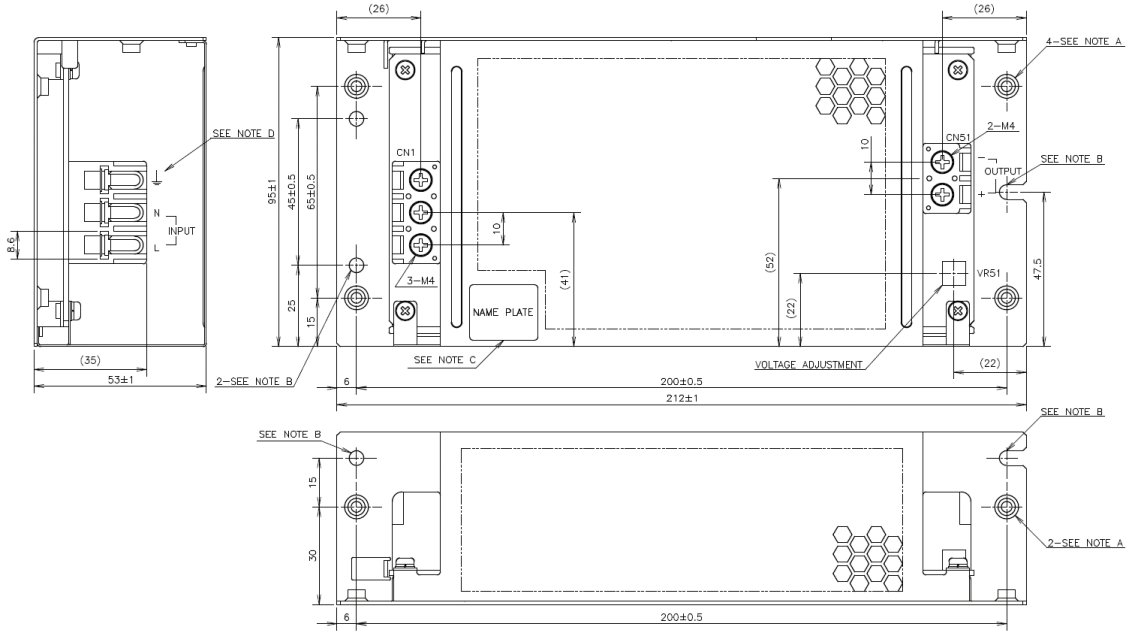
NOTES

A: M4 EMBOSSED TAPPED & COUNTERSINK HOLES (6) ARE FOR CUSTOMER'S CHASSIS MOUNTING.

B: ø4.5 HOLES (3) AND R2.25 SLOT HOLES (2) ARE FOR CUSTOMER'S CHASSIS MOUNTING HOLES.

C: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND SAFETY MARKING(FOR ONLY APPROVED PRODUCTS) ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.

D: ⏚ IS PROTECTIVE BONDING TERMINAL.



Click here for other outline drawings and technical information

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