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TDK·Lambda HWS15A-150A Series

10-150W Single Output Industrial Power Supplies

https://product.tdk.com/en/power/hws-a
www.emea.lambda.tdk.com/hws-a



Industrial | Test | COMM | LED | Broadcast | Semi-Fab

The ultra reliable, conservatively rated HWS-A series of 10W to 150W AC-DC power supplies has a limited lifetime warranty (1), unique to the industry. The series accepts a wide range 85 to 265Vac (300Vac peak for 5s) input with output voltages from 3.3V to 48V. The products are certified to IEC 62368-1, UL 508 and EN 62477-1 OVC III (HWS150A) and are SEMI F47 compliant . They also meet Class B conducted and radiated emissions without additional filtering or shielding.

Features	Benefits
• Limited Lifetime Warranty (1)	• Low Cost of Ownership
• Very Conservative Electrolytic Capacitor Ratings	• Long Service Life
• Class B Conducted and Radiated EMI	• Easier System EMC Compliance
• Low Off-Load Power Consumption	• Energy Saving
• UL 508 Certified	• Suitable For Industrial Control Equipment

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current(A)	Maximum Output Power (W)	Line Reg (mV)	Load Reg (mV)	Overvoltage (V)	Efficiency (115/230Vac)(%)
HWS15A-3/A	3.3	2.97 - 3.96	3	10	20	120	4.13 - 4.95	70 / 71
HWS30A-3/A	3.3	2.97 - 3.96	6	20	20	120	4.13 - 4.95	75 / 77
HWS50A-3/A	3.3	2.97 - 3.96	10	33	20	120	4.13 - 4.95	76 / 78
HWS100A-3/A	3.3	2.97 - 3.96	20	66	20	120	4.13 - 4.95	82 / 84
HWS150A-3/A	3.3	2.97 - 3.96	30	99	20	120	4.13 - 4.95	82 / 84
HWS15A-5/A	5	4.0 - 6.0	3	15	20	120	6.25 - 7.25	77 / 79
HWS30A-5/A	5	4.0 - 6.0	6	30	20	120	6.25 - 7.25	80 / 82
HWS50A-5/A	5	4.0 - 6.0	10	50	20	120	6.25 - 7.25	82 / 84
HWS100A-5/A	5	4.0 - 6.0	20	100	20	120	6.25 - 7.25	84 / 86
HWS150A-5/A	5	4.0 - 6.0	30	150	20	120	6.25 - 7.25	85 / 87
HWS15A-12/A	12	9.6 - 14.4	1.3	16	48	150	15 - 17.4	80 / 83
HWS30A-12/A	12	9.6 - 14.4	2.5	30	48	150	15 - 17.4	84 / 86
HWS50A-12/A	12	9.6 - 14.4	4.3	52	48	150	15 - 17.4	83 / 85
HWS100A-12/A	12	9.6 - 14.4	8.5	102	48	150	15 - 17.4	86 / 88
HWS150A-12/A	12	9.6 - 14.4	13	156	48	150	15 - 17.4	85 / 88
HWS15A-15/A	15	12.0 - 18.0	1	15	60	150	18.8 - 21.8	81 / 84
HWS30A-15/A	15	12.0 - 18.0	2	30	60	150	18.8 - 21.8	85 / 87
HWS50A-15/A	15	12.0 - 18.0	3.5	53	60	150	18.8 - 21.8	83 / 86
HWS100A-15/A	15	12.0 - 18.0	7	105	60	150	18.8 - 21.8	86 / 88
HWS150A-15/A	15	12.0 - 18.0	10	150	60	150	18.8 - 21.8	86 / 89
HWS15A-24/A	24	19.2 - 28.8	0.65	16	96	150	30 - 34.8	82 / 85
HWS30A-24/A	24	19.2 - 28.8	1.3	31	96	150	30 - 34.8	86 / 88
HWS50A-24/A	24	19.2 - 28.8	2.2	53	96	150	30 - 34.8	84 / 87
HWS100A-24/A	24	19.2 - 28.8	4.5	108	96	150	30 - 34.8	87 / 89
HWS150A-24/A	24	19.2 - 28.8	6.5	156	96	150	30 - 34.8	88 / 90
HWS15A-48/A	48	38.4 - 52.8	0.33	16	192	200	55.2 - 64.8	80 / 80
HWS30A-48/A	48	38.4 - 52.8	0.65	31	192	200	55.2 - 64.8	82 / 83
HWS50A-48/A	48	38.4 - 52.8	1.1	53	192	200	55.2 - 64.8	84 / 86
HWS100A-48/A	48	38.4 - 52.8	2.1	101	192	200	55.2 - 64.8	88 / 90
HWS150A-48/A	48	38.4 - 52.8	3.3	158	192	200	55.2 - 64.8	89 / 91

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HWS150A	-	3	/	A

Series and nominal power level

Output voltage
3 (3.3V), 5, 12, 15, 24, 48

/A	Cover
blank	No cover
/HD	See HWS/HD datasheet. -40°C start up & pcb coating
/ME	See HWS/ME datasheet. Medical certification
/R	Remote on/off (HWS50A, 100A and 150A only)

Preferred Option

Specifications

Model		HWS15A	HWS30A	HWS50A	HWS100A	HWS150A
Input						
Input Voltage Range (Operating)	Vac	85 - 265				
Nominal Input Voltage Range	Vac	100 - 240 (Note: Safety certified for 90-264Vac)				
Input Surge Voltage	Vac	300 for 5s				
Input Frequency	Hz	47 - 63 (Note: Safety certified for 50/60Hz only)				
DC Input Voltage range	Vdc	120 - 370 (Note: Safety certified for AC input only)				
Input Current (100/200Vac)	A	0.35 / 0.2	0.65 / 0.4	0.65 / 0.35	1.3 / 0.65	1.9 / 0.95
Inrush Current (100/200Vac)	A	14 / 28 (Typical at cold start)				
Leakage Current	mA	>0.5 (Typically 0.2 at 100Vac, 0.4 at 230Vac)				
Power Factor (100/200Vac)	-	-	-	0.97/0.91	0.98/0.93	0.98/0.93
Harmonic Compliance	-	Meets IEC61000-3-2 Class A				
No Load Power Consumption	W	Between 0.3 and 4.6 (model dependent). See evaluation data on website				
Hold Up Time (typ)	ms	20				
Efficiency	-	See Model Selector Table				
Conducted & Radiated EMI	-	EN55011 / EN55032-B, FCC-B, VCCI-B				
Immunity	-	See immunity table				
Safety Certifications and Markings	-	IEC/EN/UL/CSA62368-1, 60950-1, EN50178-1 OVC III (HWS150A only), UL508, CE Mark and UKCA Mark				

Immunity

Test	Standard	Test Level	Criteria	Notes (See IEC61000 immunity test report on website)
ESD	EN61000-4-2	Air ± 8kV and contact ± 6kV	B	
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	B	
Surge	EN61000-4-5	Normal ± 2kV Common ± 4kV	B	
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	A A A B	
SEMI F47 Line Dip	SEMI F47	-	-	At input voltages > 200Vac

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Specifications

Model		HWS15A	HWS30A	HWS50A	HWS100A	HWS150A
Output						
Switching Frequency	kHz	HWS15A-50A; 100, HWS100A-150A; 120, PFC converter 65				
Line Regulation	mV	See Model Selector Table				
Load Regulation	mV	See Model Selector Table				
External Load Capacitance (Maximum)	uF	3.3V, 5V: 10,000 12V: 5,000, 15V: 2,000 24V: 1,000, 48V: 500	3.3V, 5V: 10,000 12V, 15V: 5,000 24V: 2,000, 48V: 500		3.3V, 5V: 10,000 12V, 15V: 10,000 24V: 5,000, 48V: 1,000	
Ripple & Noise	mV	3.3V, 5V: 120, 12V, 15V, 24V: 150, 48V: 200				
Temperature Coefficient	%/°C	0.02				
Minimum Load	-	No minimum load required				
Overcurrent Protection	-	HWS15A-50A; >105%. Hiccup with automatic recovery HWS100A-150A; >105%. Constant current and Hiccup with automatic recovery				
Overvoltage Protection	V	See model selector table. Latching (unit shutdown), cycle AC input to reset				
Overtemperature Protection	-	-				
Remote Sense		On HWS100A-150A models only				
Remote On/Off		Optional /R suffix on HWS50A, HWS100A and HWS150A				
Indicators	-	Green LED indicates DC is OK				
Parallel Operation	-	Not possible				
Environmental						
Operating Temperature	°C	HWS15A: -10 to +70, derate linearly to 50% load from 50 to 70				
(Cover models, /A suffix)		HWS30A to 150A: -10 to +70, derate linearly to 20% load from 50 to 70				
Storage Temperature	°C	-30 to +85				
Humidity (non condensing)	%RH	Operating: 30 - 90, Non operating 10 - 95				
Cooling	-	Convection				
Altitude	m	4,000				
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)	g	190	240	300	470	520
Size (WxHxD) (with cover /A)	mm	31.5 x 82 x 80	31.5 x 82 x 95	31.5 x 82 x 120	33.5 x 83 x 160.5	42 x 82 x 160
Size (WxHxD) (with cover /A)	Inches	1.24 x 3.23 x 3.15	1.24 x 3.23 x 3.74	1.24 x 3.23 x 4.72	1.32 x 3.27 x 6.32	1.65 x 3.23 x 6.3
Connectors	-	Screw terminals				
Case Material	-	Aluminum				
MTBF - Telcordia SR-332 issue 3*		12,116,851	8,169,868	3,726,622	2,963,512	2,676,081
Warranty	yrs	Limited lifetime (1) or 5 years				

Notes

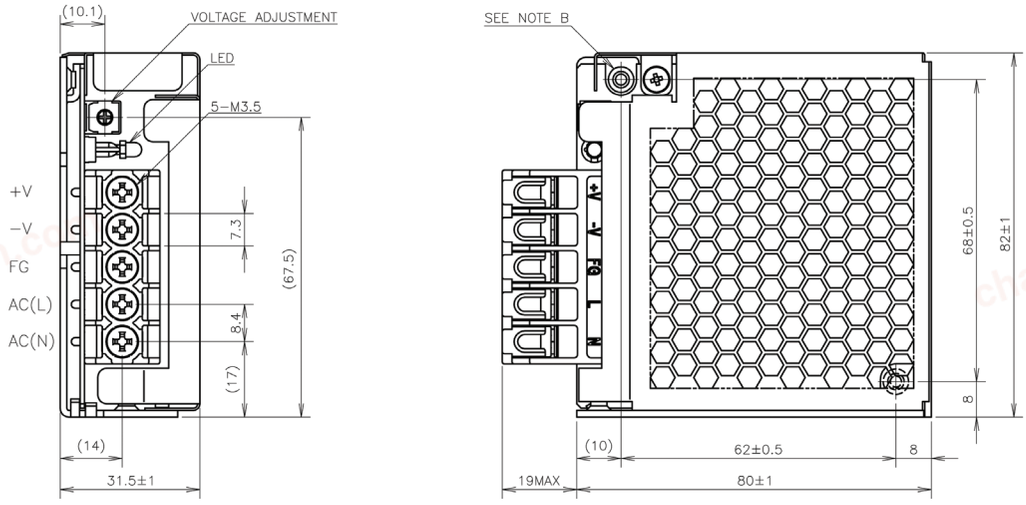
See website for detailed specifications, test methods and installation manual

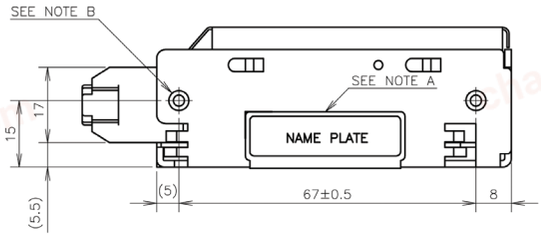
(1) The Americas and EMEA regions: limited lifetime warranty. Other regions: 5 years. See applicable regional terms of sale.

*24V output model, 55°C ambient, full load, 230Vac input

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HWS15A/A Outline Drawing



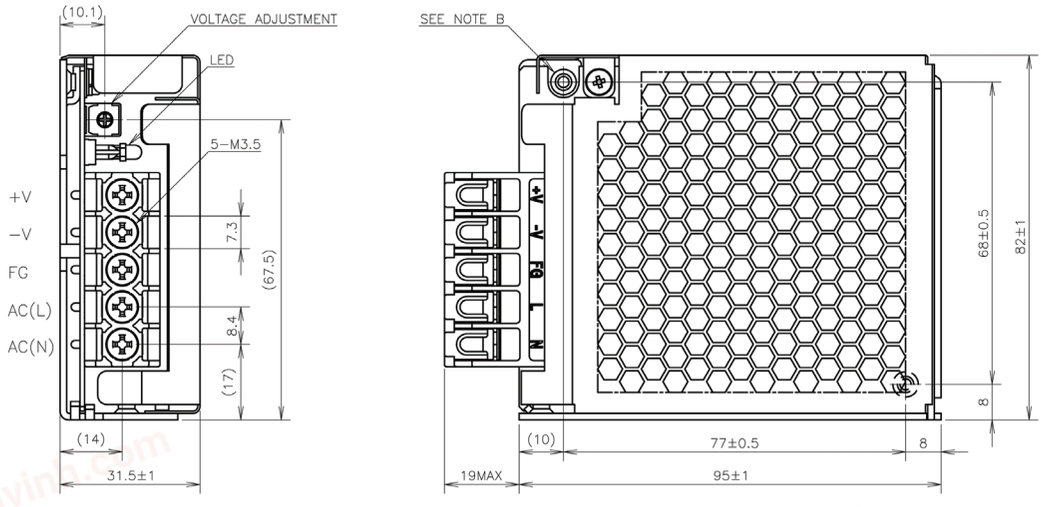


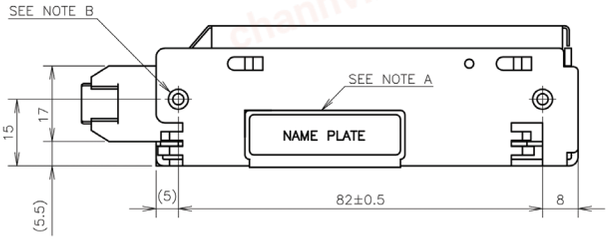
NOTES

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

B : M3 EMBOSSED, TAPPED AND COUNTERSUNK HOLES (4) FOR CUSTOMER CHASSIS MOUNTING. SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 6mm.

HWS30A/A Outline Drawing





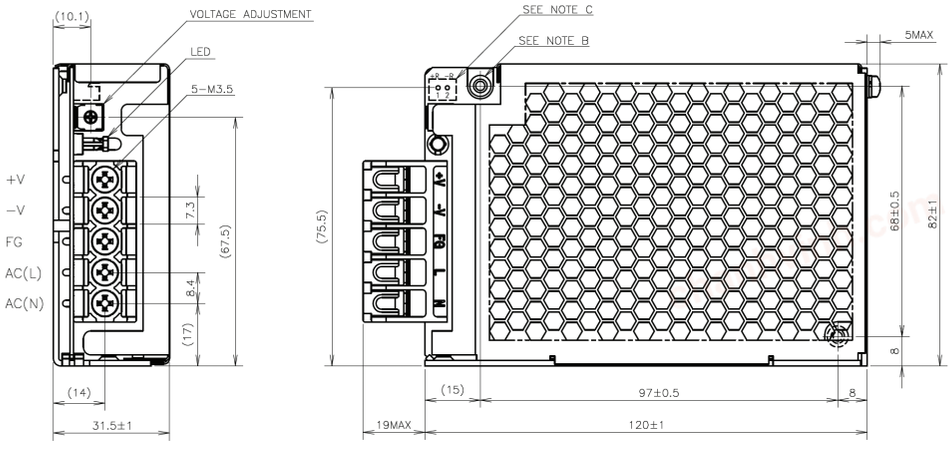
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B : M3 EMBOSSED, TAPPED AND COUNTERSUNK HOLES (4) FOR CUSTOMER CHASSIS MOUNTING. SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 6mm.

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HWS50A/A Outline Drawing

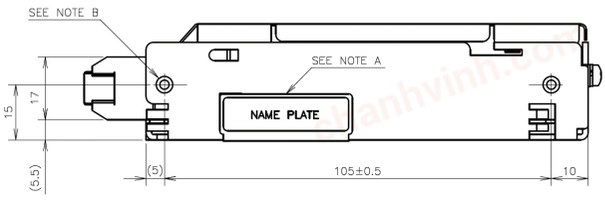


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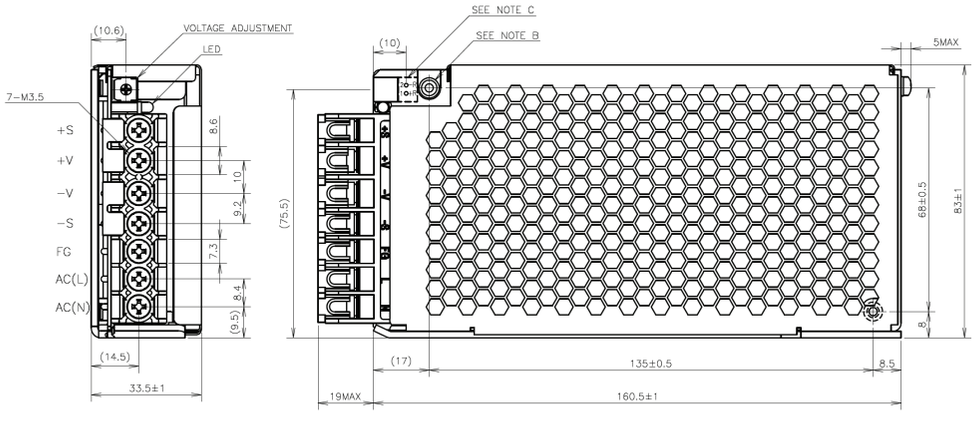
C : REMOTE ON/OFF CONTROL CONNECTOR --- OPTION
B2B-XH-AM (JST)
MATCHING HOUSING : XHP-2 (JST)
MATCHING TERMINAL PIN : BXH-001T-P0.6 (JST) OR SXH-001T-P0.6 (JST)
HAND CRIMPING TOOL : YC-110R (JST) OR YRS-110 (JST)
MATCHING HOUSING AND TERMINAL PIN --- NOT INCLUDED WITH THE PRODUCT



OPTIONAL MODELS

MODEL	COVER	REMOTE ON/OFF CONTROL
HWS50A-* /A	○	—
HWS50A-* /RA	○	○

HWS100A/A Outline Drawing



NOTES

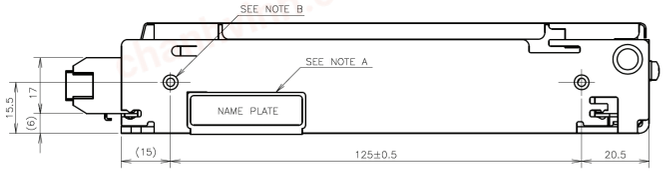
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B : M3 EMBOSSED, TAPPED AND COUNTERSUNK HOLES (4) FOR CUSTOMER CHASSIS MOUNTING. SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 6mm.

C : REMOTE ON/OFF CONTROL CONNECTOR --- OPTION
B2B-XH-AM (JST)
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MATCHING TERMINAL PIN : 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 PIN --- NOT INCLUDED WITH THE PRODUCT

ACCESSORIES

* SHORT PIECE (NET 2) FOR SHORTING PURPOSE (+S~+V, -S~-V) : MOUNTED AT TIME OF SHIPMENT.

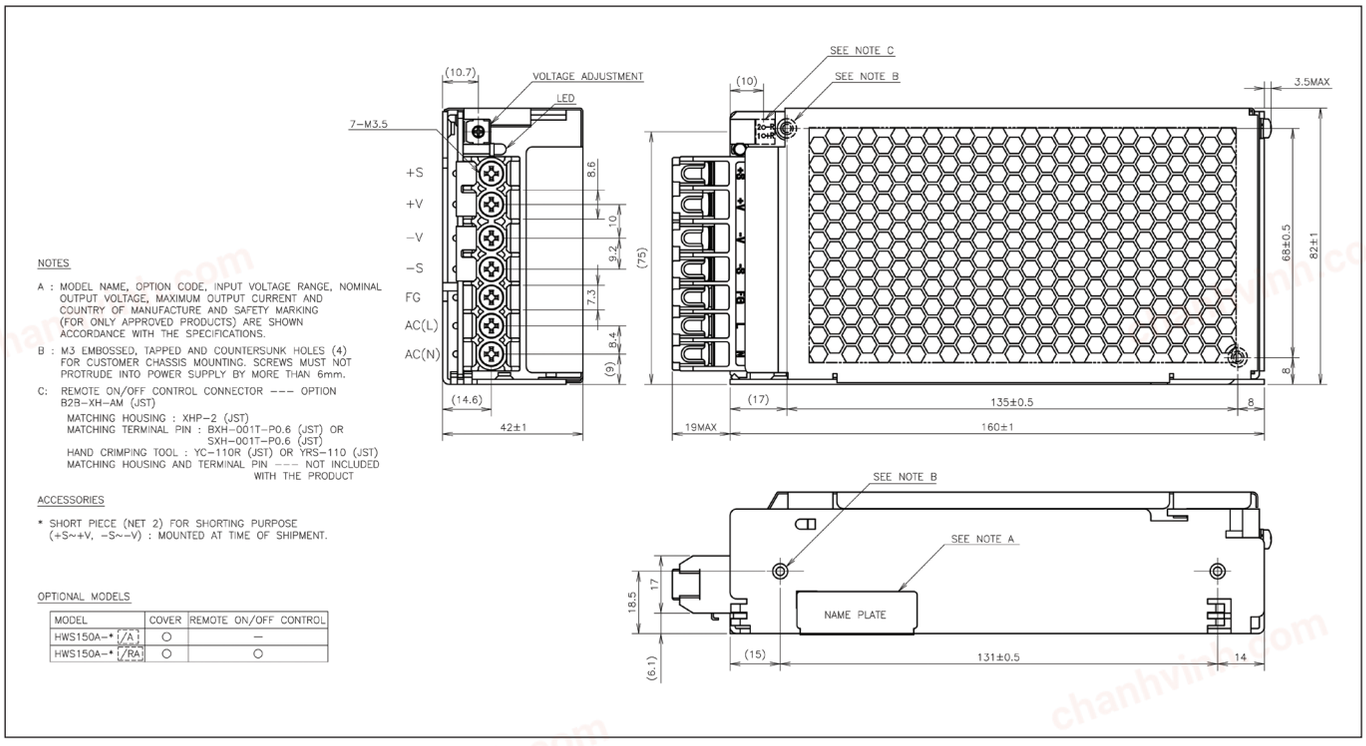


OPTIONAL MODELS

MODEL	COVER	REMOTE ON/OFF CONTROL
HWS100A-* /A	○	—
HWS100A-* /RA	○	○

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HWS150A/A Outline Drawing



NOTES

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

B : M3 EMBOSSED, TAPPED AND COUNTERSUNK HOLES (4) FOR CUSTOMER CHASSIS MOUNTING. SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 6mm.

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MATCHING HOUSING : XHP-2 (JST)
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MATCHING HOUSING AND TERMINAL PIN --- NOT INCLUDED WITH THE PRODUCT

ACCESSORIES

* SHORT PIECE (NET 2) FOR SHORTING PURPOSE (+S~+V, -S~-V) : MOUNTED AT TIME OF SHIPMENT.

OPTIONAL MODELS

MODEL		COVER	REMOTE ON/OFF CONTROL
HWS150A-*	/A	○	—
HWS150A-*	/RA	○	○

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