

XWS SERIES - 150 WATT

DESCRIPTION

XWS DC/DC converters are high-powered converters which cover a wide range of industrial and general applications. Available input voltages include 12V, 24V, 40V, and 48V; output voltages are available from 5V to 24V. The XWS features remote sense leads for accurate point of load regulation, and has short circuit and overcurrent protection. For dual and triple output high power solutions, see the XWD and XWT series of converters, respectively.



TECHNICAL SPECIFICATIONS

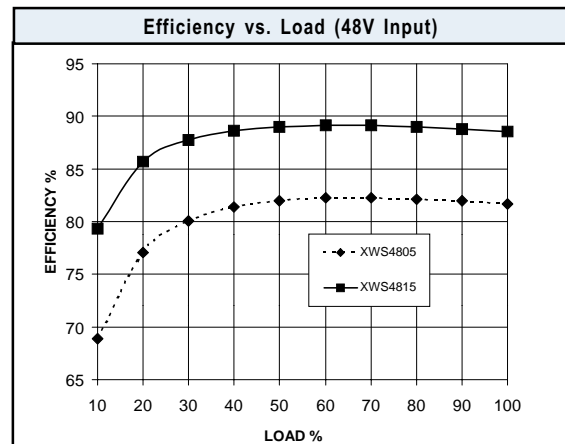
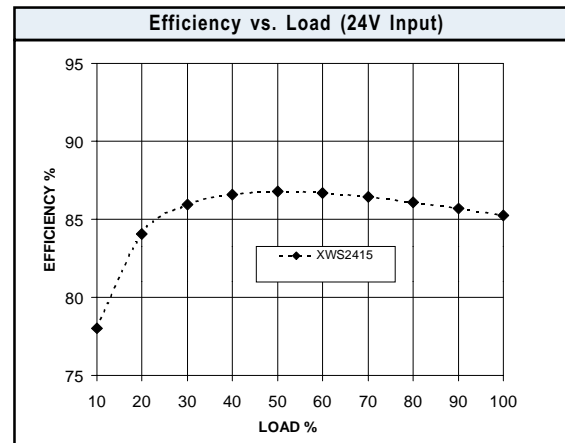
Input	
Voltage Range	
12 VDC Nominal	10 - 20 VDC
24 VDC Nominal	18 - 36 VDC
40 VDC Nominal (Wide Input)	20 - 60 VDC
48 VDC Nominal	36 - 72 VDC
Input Ripple Current	20% I_{in} Max.
Reverse Input Current	100% I_{in} Max.

Output	
Setpoint Accuracy	±1%
Line Regulation V_{in} Min. - V_{in} Max., I_{out} Rated	±0.2% V_{out}
Load Regulation I_{out} Min. - I_{out} Max., V_{in} Nom.	±1% V_{out}
Minimum Output Current	10 % I_{out} rated
Dynamic Regulation, Loadstep	25% I_{out}
Pk Deviation	4% V_o
Settling Time	500 μ s
Voltage Trim Range	±10%
Current Limit Threshold Range, % of I_{out} Rated	110 - 130%
Short Circuit Protection	Continuous
OVP	All Models

General	
Turn-On Time	10 ms
Remote Shutdown	TTL And CMOS Compatible, Positive Logic
Switching Frequency	200 kHz
Isolation	
Input - Output	500 VDC
Temperature Coefficient	±0.02%/°C
Case Temperature	
Operating Range	-25 To +85°C†
Storage Range	-40 To +125°C
Thermal Shutdown Range	105 To 115°C
Humidity Max., Non-Condensing	95%
Vibration, 3 Axes, 5 Min Each	5 g, 10 - 55 Hz
MTBF† (Bellcore TR-NWT-000332)	Consult Factory
Safety	Consult Factory
Weight (Approx.)	15.4 oz

FEATURES

- High Power Package
- Wide Input Range
- Trim and Enable Pins
- Remote Sense Pins
- 500V Isolation
- Short Circuit Protection



Notes
† MTBF predictions may vary slightly from model to model.
†† Industrial temp range available
Specifications typically at 25°C, normal line, and full load, unless otherwise stated.
Soldering Conditions: I/O pins, 260°C, ten seconds; fully compatible with commercial wave-soldering equipment.
Safety: Agency approvals may vary from model to model. Please consult factory for specific model information.

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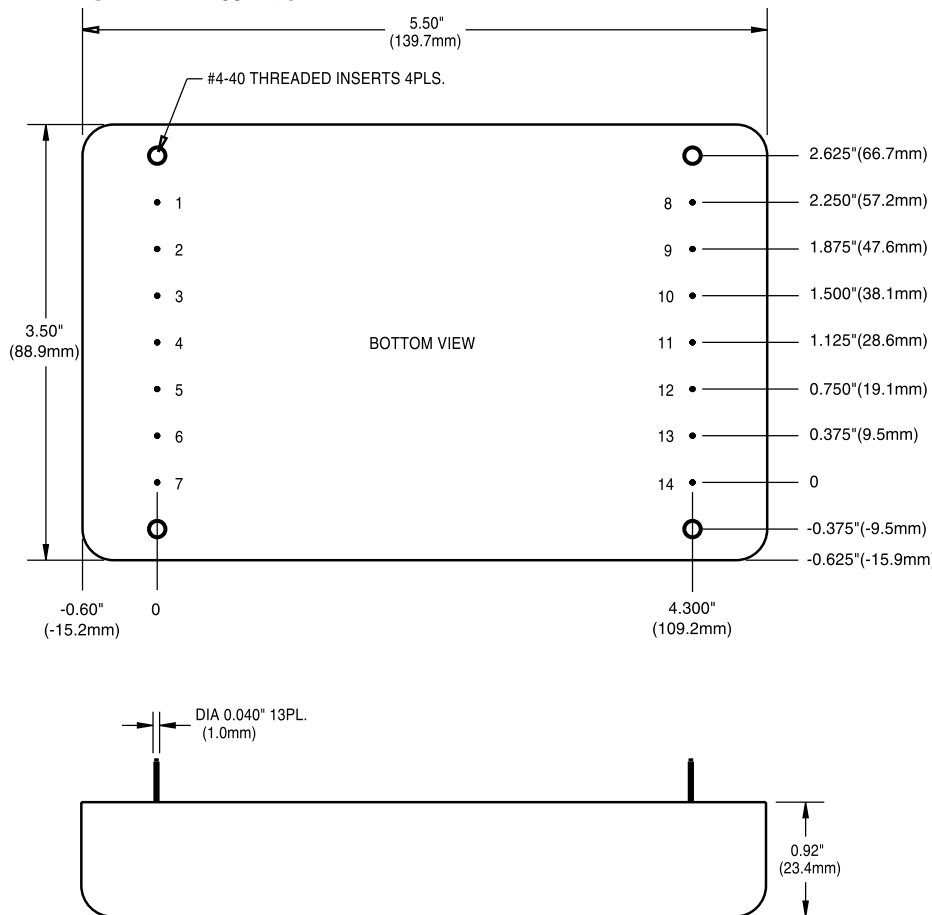
MODELS - (See the last page of this file for options.)

Vin (Volts)	Vin Range (Volts)	Iin Max* (Amps)	Vout (Volts)	Iout Rated (Amps)	Ripple & Noise Pk-Pk (mV)	Efficiency Typ. **	Model
12	10 - 20	13.9	5	20	50	79%	XWS1205
12	10 - 20	16.9	12	10.4	120	81%	XWS1212
12	10 - 20	16.7	15	8.3	150	82%	XWS1215
12	10 - 20	15.7	24	5	240	84%	XWS1224
24	18 - 36	10.9	5	30	50	83%	XWS2405
24	18 - 36	12.9	12	15	120	85%	XWS2412
24	18 - 36	12.8	15	12	150	86%	XWS2415
24	18 - 36	13.6	24	8	240	86%	XWS2424
48	36 - 72	5.5	5	30	50	82%	XWS4805
48	36 - 72	6.5	12	15	120	85%	XWS4812
48	36 - 72	6.5	15	12	150	85%	XWS4815
48	36 - 72	6.8	24	8	240	86%	XWS4824
40	20 - 60	10.3	5	30	50	80%	XWS6005
40	20 - 60	12.4	12	15	120	80%	XWS6012
40	20 - 60	12.2	15	12	150	81%	XWS6015
40	20 - 60	12.9	24	8	240	82%	XWS6024

* Maximum input current at minimum input voltage, maximum rated output power.

** At nominal Vin, rated output.

MECHANICAL DRAWING



Thermal Impedance	
Natural Convection	2.5 °C/W
100 LFM	2.1 °C/W
200 LFM	1.7 °C/W
300 LFM	1.3 °C/W
400 LFM	1.1 °C/W

Note:
Thermal impedance data is dependent on many environmental factors. The exact thermal performance should be validated for specific application.

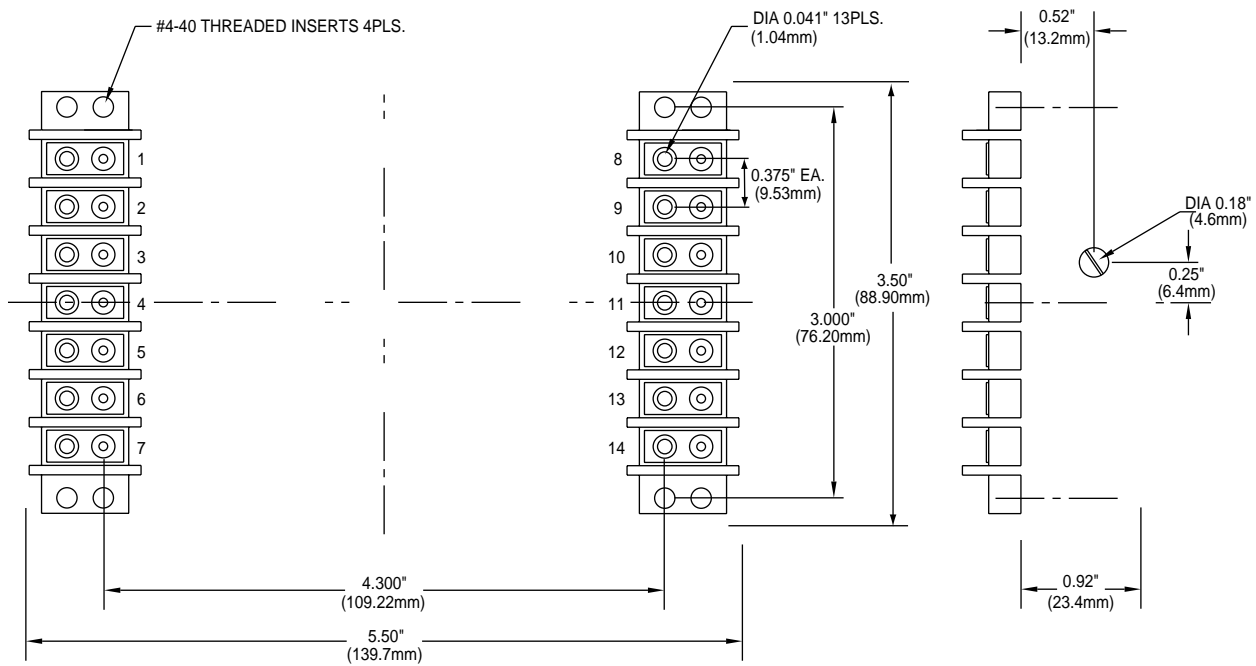
Pin	Function
1	No Pin
2	-V _{in}
3	-V _{in}
4	+V _{in}
5	+V _{in}
6	Enable
7	Case
8	-V _{out}
9	-V _{out}
10	+V _{out}
11	+V _{out}
12	- Sense
13	Trim
14	+ Sense

Tolerances	
Inches:	(Millimeters)
.XX ± 0.040	.X ± 1.0
.XXX ± .010	.XX ± 0.25
Pin:	
± 0.002	± 0.05

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TERMINAL STRIP OPTION

MECHANICAL DRAWING



PIN VIEW

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
.X .030
.XX .040
.XXX .010
FRACTION .030

OPTIONS

When ordering equipment options, use the following suffix information. Select the option(s) that you prefer and add them to the model number. Example ordering options are located below the options table.

OPTION	SUFFIX	APPLICABLE SERIES	REMARKS
Negative Logic	N	HAS, HBD, HBS, HES, LES, QBS, QES, TES, TQD	TTL "Low" Turns Module ON TTL "High" Turns Module OFF
Lucent Compatible Trim	T	HAS, HBD, HBS, HES, QBS, QES	
Terminal Strip	TS	XWS, XWD, XWT	
Trim	1	IAS, LES	
Enable	2	IAD, IAS, LES, SMS	
Trim and Enable	3	IAS, LES	
Current Share	4	SMS	
Headerless	Y	Encapsulated EWS, IWS, OWS	
PIN LENGTH AND HEATSINK OPTIONS			Standard Pin Length is 0.180" (4.6mm)
0.110" (2.8mm) Pin Length	8	All Units (Except SMS)	
0.150" (3.8mm) Pin Length	9	All Units (Except SMS)	
0.24" (6.1mm) Horizontal Heatsink	1H	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad
0.24" (6.1mm) Vertical Heatsink	1V	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad
0.45" (11.4mm) Horizontal Heatsink	2H	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad
0.45" (11.4mm) Vertical Heatsink	2V	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad
0.95" (24.1mm) Horizontal Heatsink	3H	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad
0.95" (24.1mm) Vertical Heatsink	3V	All Units (Except DIP, SIP, and SM Packages)	Includes Thermal Pad

Example Options: HBS050ZG-ANT3V = HBS050ZG-A with negative logic, Lucent compatible trim, and 0.95" vertical heatsink.

LES015YJ-3N = LES015YJ with optional trim and enable, negative logic.

QBS066ZG-AT8 = QBS066ZG-A with Lucent compatible trim and 0.110" pin length.

NUCLEAR AND MEDICAL APPLICATIONS Power-One products are not authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the President of Power-One, Inc.

TECHNICAL REVISIONS The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.