

Size: 1.25in x 0.80in x 0.40 in
(31.75mm x 20.32mm x 10.16mm)

OPTIONS

- Input Voltage
- Output Quantity
- Output Voltage

APPLICATIONS

- Wireless Network
- Telecom/Datacom
- Industry Control System
- Measurement Equipment
- Semiconductor Equipment

FEATURES

- 4:1 Ultra Wide Input Range
- Output Power Up to 5 Watts
- Ultra Low Ripple and Noise
- CE Marked
- RoHS II & REACH Compliant
- Low Standby Power
- Standard 1.25” x 0.80” x 0.40” Package
- Built-In EN55022 Class B Filter
- Six Side Shielding
- 1600VDC Input to Output Isolation
- Safety Meets UL60950-1, EN60950-1, and IEC60950-1
- Over Voltage, Over Load, and Short Circuit Protection

DESCRIPTION

The LANC-LN series of DC DC converters provides up to 5 watts of output power in a compact 1.25” x 0.80” x 0.40” package. This series consists of single and dual output models with a 4:1 ultra wide input range. Each model in this series has over voltage, over load, and short circuit protection and is compliant to RoHS and REACH. This series has ultra-low ripple and noise as well as low standby power. The safety of this series meets UL60950-1, EN60950-1, and IEC60950-1. Please call factory for order details.

MODEL SELECTION TABLE
Single Output Models

Model Number	Input Voltage Range	Output Voltage	Output Current @Full Load	Ripple & Noise	No Load Input Current	Output Power	Maximum Capacitive Load	Efficiency
LANC24S3P3W-LN	24VDC (9~36VDC)	3.3VDC	1515mA	10mVp-p	6mA	Up to 5W	2200µF	81%
LANC24S05W-LN		5VDC	1000mA		6mA		1000µF	83%
LANC24S12W-LN		12VDC	416mA		9mA		220µF	88%
LANC24S15W-LN		15VDC	333mA		10mA		150µF	88%
LANC24S24W-LN		24VDC	208mA		10mA		100µF	89%
LANC48S3P3W-LN	48VDC (18~75VDC)	3.3VDC	1515mA	10mVp-p	4mA	Up to 5W	2200µF	80%
LANC48S05W-LN		5VDC	1000mA		4mA		1000µF	83%
LANC48S12W-LN		12VDC	416mA		4mA		220µF	86%
LANC48S15W-LN		15VDC	333mA		4mA		150µF	87%
LANC48S24W-LN		24VDC	208mA		6mA		100µF	88%

MODEL SELECTION TABLE
Dual Output Models

Model Number	Input Voltage Range	Output Voltage	Output Current	Ripple & Noise	No Load Input Current	Output Power	Maximum Capacitive Load	Efficiency
LANC24D05W-LN	24VDC (9~36VDC)	±5VDC	±500mA	10mVp-p	6mA	Up to 5W	±680µF	84%
LANC24D12W-LN		±12VDC	±208mA		9mA		±150µF	85%
LANC24D15W-LN		±15VDC	±166mA		10mA		±150µF	86%
LANC24D24W-LN		±24VDC	±104mA		10mA		±100µF	87%
LANC24DS05W-LN		Vout1: 5VDC Vout2: 5VDC	500mA 500mA		6mA		680µF 680µF	84%
LANC24DS12W-LN		Vout1: 12VDC Vout2: 12VDC	208mA 208mA		9mA		150µF 150µF	85%
LANC24DS15W-LN		Vout1: 15VDC Vout2: 15VDC	166mA 166mA		10mA		150µF 150µF	86%
LANC24DS24W-LN		Vout1: 24VDC Vout2: 24VDC	104mA 104mA		10mA		100µF 100µF	86%
LANC48D05W-LN	48VDC (18~75VDC)	±5VDC	±500mA	10mVp-p	6mA	Up to 5W	±680µF	83%
LANC48D12W-LN		±12VDC	±208mA		4mA		±150µF	85%
LANC48D15W-LN		±15VDC	±166mA		5mA		±150µF	86%
LANC48D24W-LN		±24VDC	±104mA		6mA		±100µF	87%
LANC48DS05W-LN		Vout1: 5VDC Vout2: 5VDC	500mA 500mA		6mA		680µF 680µF	83%
LANC48DS12W-LN		Vout1: 12VDC Vout2: 12VDC	208mA 208mA		4mA		150µF 150µF	85%
LANC48DS15W-LN		Vout1: 15VDC Vout2: 15VDC	166mA 166mA		5mA		150µF 150µF	86%
LANC48DS24W-LN		Vout1: 24VDC Vout2: 24VDC	104mA 104mA		6mA		100µF 100µF	86%

SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS			Min	Typ	Max	Unit
INPUT SPECIFICATIONS							
Input Voltage Range	24V Nominal Input			9	24	36	VDC
	48V Nominal Input			18	48	75	
Start-Up Voltage	24V Nominal Input					9	VDC
	48V Nominal Input					18	
Shutdown Voltage	24V Nominal Input				8.5		VDC
	48V Nominal Input				16		
Input Surge Voltage	1 second, Max.	24V Nominal Input				50	VDC
		48V Nominal Input				100	
Input Filter					Common Chock		
OUTPUT SPECIFICATIONS							
Output Voltage					See Table		
Voltage Accuracy				-1.0		+1.0	%
Line Regulation	Low Line to High Line at Full Load	Single Output		-0.2		+0.2	%
		Dual Output		-0.2		+0.2	
		Dual with Output Isolation	$Vout\ 2_{(Main)}$	-0.2		+0.2	
			$Vout\ 1_{(Aux)}$	-0.1		+1.0	
Load Regulation	No Load to Full Load	Single Output		-0.5		+0.5	%
		Dual Output		-1.0		+1.0	
	10% Full Load to Full Load	Dual with Output Isolation	$Vout\ 2_{(Main)}$	-0.5		+0.5	
			$Vout\ 1_{(Aux)}$	-1.0		+1.0	
Voltage Adjustability	Single Output			-10		+20	%
	Dual Output			-10		+10	
	Dual Output Isolation			-10		+10	
Cross Regulation	Asymmetrical load 25%/100%/FL	Dual Output		-3.0		+3.0	%
		5V Dual with Output Isolation	$Vout\ 2_{(Main)}$	-0.5		+0.5	
			$Vout\ 1_{(Aux)}$	-6.0		+6.0	
		Others	$Vout\ 2_{(Main)}$	-0.5		+0.5	
			$Vout\ 1_{(Aux)}$	-4.0		+4.0	
Output Power					See Table		
Output Current					See Table		
Minimum Load	Dual with Output Isolation				10		%
Maximum Capacitive Load					See Table		
Ripple & Noise (20MHz bandwidth)	Measured by 20MHz bandwidth				10	15	mVp-p
	Measured by 20MHz bandwidth, with additional 10µF capacitor				5	10	mVp-p
Transient Response Recovery Time	50% Load step change				250		µS
Start-Up Time	Constant resistive load	Power Up			50	75	ms
		Remote ON/OFF			50	75	
Temperature Coefficient				-0.02		+0.02	%/ºC
REMOTE ON/OFF CONTROL(1)							
Positive Logic	DC-DC ON				Open or 3~12VDC		
	DC-DC OFF				Short or 0~1.2VDC		
Input Current of CTRL Pin				-0.5		1	mA
Remote OFF Input Current					3		mA
PROTECTION							
Short Circuit Protection					Continuous, Automatic Recovery		
Over Load Protection	% of Iout rated; Hiccup mode				170		%
Over Voltage Protection	% of Vout(nom)				135		%
ENVIRONMENTAL SPECIFICATIONS							
Operating Ambient Temperature	Without Derating			-40		+85	ºC
	With Derating			+85		+100	
Maximum Case Temperature						+105	ºC
Storage Case Temperature				-55		+125	ºC
Relative Humidity				5		95	%RH
Thermal Impedance	Natural Convection				20		ºC/W
Thermal Shock					MIL-STD-810F		
Vibration					MIL-STD-810F		
MTBF	MIL-HDBK-217F, Full Load				4,446,000		Hours

SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
GENERAL SPECIFICATIONS						
Efficiency			See Table			
Switching Frequency				300		kHz
Isolation Voltage	1 Minute	Input to Output	1600			VDC
		Input (Output) to Case	1600			
		Vout 1 to Vout 2; Only Dual with Output Isolation Models	500			
Isolation Resistance	500VDc		1			GΩ
Isolation Capacitance					1200	pF
PHYSICAL SPECIFICATIONS						
Weight			0.52oz (14.8g)			
Dimensions (L x W x H)			1.25in x 0.80in x 0.40in (31.75mm x 20.32mm x 10.16mm)			
Case Material			Copper			
Base Material			FR4 PCB			
Potting Material			Epoxy (UL94 V-0)			
Shielding			Six-Sided			
SAFETY & EMC CHARACTERISTICS						
Safety Approvals			UL60950-1 EN60950-1 IEC60905-1			
EMI[2]	EN55022		Class A, Class B			
ESD	EN61000-4-2	Air ±8kV and Contact ±6kV	Perf. Criteria A			
Radiated Immunity	EN61000-4-3	20 V/m	Perf. Criteria A			
Fast Transient[3]	EN61000-4-4	±2kV	Perf. Criteria A			
Surge[3]	EN61000-4-5	±2kV	Perf. Criteria A			
Conducted Immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A			
Power Frequency Magnetic Field	EN61000-4-8	100 A/m continuous; 1000A/m 1 second	Perf. Criteria A			

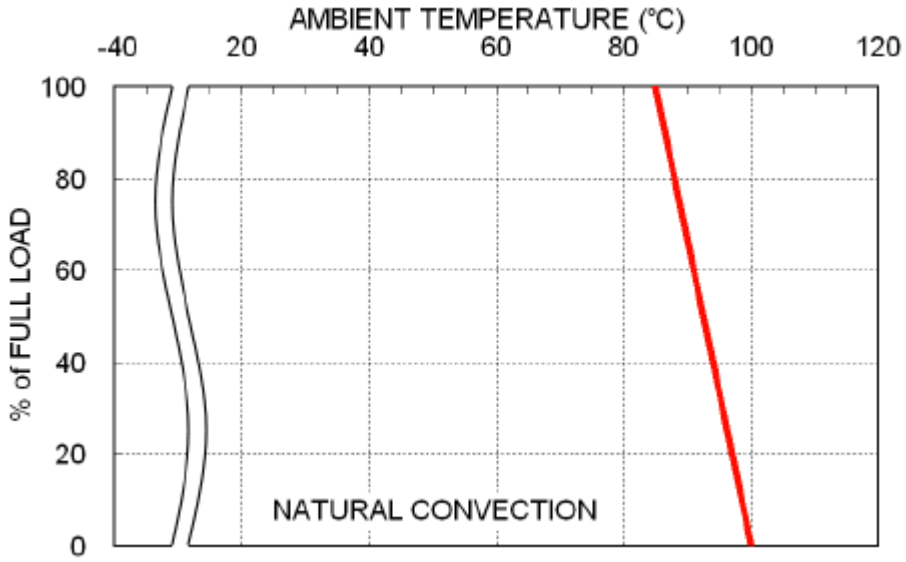
NOTES

(1) Remote ON/OFF referred to as –Vin pin
(2) The standard modules meet EN55022 Class A without external components.
The standard modules meet EN55022 Class B as follows:
-LANC24xxxW-LN Models: Do not need any external components.
-LANC48xxxW-LN Models: Connect two 4.7µF/100V MLCCs in parallel to input pins.
(3) An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.
-LANC24xxxW-LN models are recommended to use an aluminum electrolytic capacitor (Nippon chemi-con KY series, 220µF/100V) and a TVS (SMDJ70A, 70V, 3000 Watt peak pulse power) to connect in parallel.
-LANC48xxxW-LN Models are recommended to use an aluminum electrolytic capacitor (Nippon chemi-con KY series, 220µF/100V) and a TVS (SMDJ120A, 120V, 3000 Watt peak pulse power) to connect in parallel.

CAUTION: This power module is not internally fused. An input line fuse must always be used.

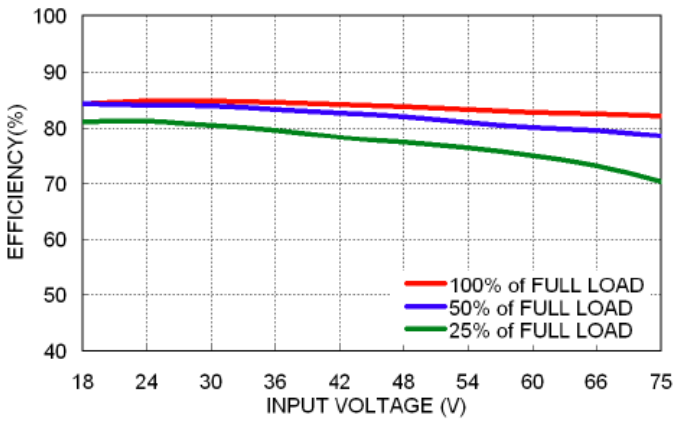
DERATING CURVES

LANC48S05W-LN Derating Curve

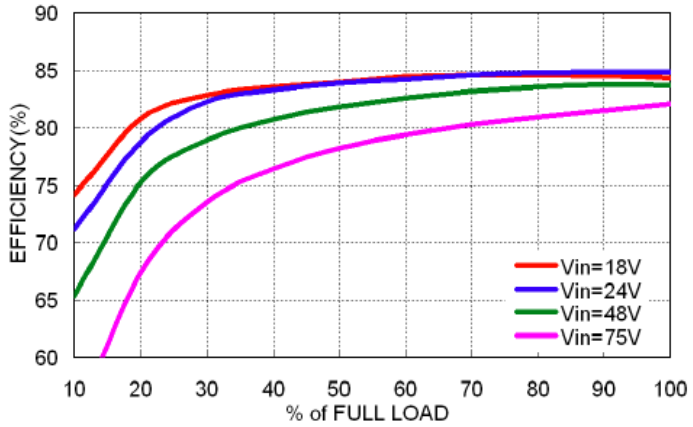


EFFICIENCY GRAPHS

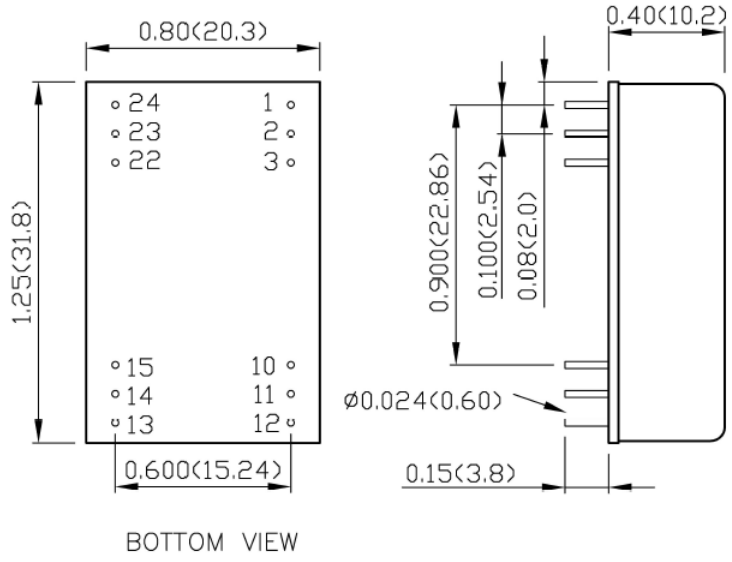
LANC48S05W-LN Efficiency vs. Input Voltage



LANC48S05W-LN Efficiency vs. Output Load



MECHANICAL DRAWINGS



BOTTOM VIEW

1. All dimensions in inch (mm)
2. Tolerance :x.xx±0.02 (x.x±0.5)
   x.xxx±0.01 (x.xx±0.25)
3. Pin pitch tolerance ±0.01 (0.25)
4. Pin dimension tolerance ±0.004(0.1)

PIN CONNECTION

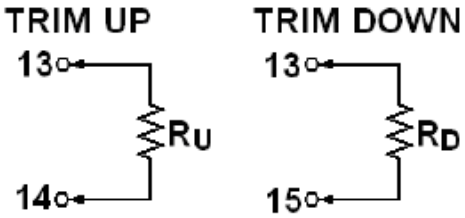
Single Output			
PIN	DEFINE	PIN	DEFINE
1	+Vin	24	-Vin
2	+Vin	23	-Vin
3	Case	22	Ctrl
10	No Pin	15	+Vout
11	No Pin	14	-Vout
12	Case	13	Trim

Dual Output			
PIN	DEFINE	PIN	DEFINE
1	+Vin	24	-Vin
2	+Vin	23	-Vin
3	Case	22	Ctrl
10	Com	15	Com
11	+Vout 1	14	-Vout 2
12	Case	13	Trim

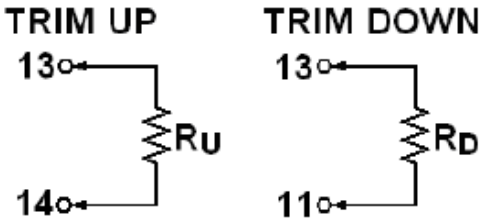
Dual with Output Isolation			
PIN	DEFINE	PIN	DEFINE
1	+Vin	24	-Vin
2	+Vin	23	-Vin
3	Case	22	Ctrl
10	-Vout1 (Aux)	15	+Vout2(Main)
11	+Vout1(Aux)	14	-Vout2(Main)
12	Case	13	Trim

External Output Trimming
Output can be externally trimmed by using the method show below:

Single and Dual Output Models



Dual with Output Isolation



MODEL NUMBER SETUP

LANC	24	-	S	24	W	-	LN	CS
Series Name	Input Voltage		Output Quantity	Output Voltage	Input Range			
	24: 9~36VDC **48:** 18~75VDC		**S:** Single	**3P3:** 3.3VDC **05:** 5VDC **12:** 12VDC **15:** 15VDC **24:** 24VDC	**4:1**		**LN:** Low Noise	**Blank:** With Pin3 **CS:**Without Pin 3
			D: Dual	**05:** ±5VDC **12:** ±12VDC **15:** ±15VDC **24:** ±24VDC				
			DS: Dual with Output Isolation	**05:** 5/5VDC **12:** 12/12VDC **15:** 15/15VDC **24:** 24/24VDC				

COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

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