

AC-DC CONVERTER

UNIVERSAL INPUT, 30 WATT

SINGLE OUTPUT, EXTRA SMALL PACKAGE

UIS30 SERIES



FEATURES

- Terminal Block and DIN Rail Options
- 2.89" × 1.50" × 1.00" Encapsulated Package (Pin Type)
- 3000 Vac Reinforced Insulation
- Adj. Output Voltage
- Internal EN55032 Class B Filter
- Low Standby Power
- Low Leakage Current
- Operating Altitude 5000 Meter
- Protection Class II
- Over Current Protection
- Over Voltage Protection
- Short Circuit Protection
- ROHS Compliant
- Reach Compliant

SELECTION GUIDE

All specifications are typical at 230Vac input, full load and 25°C, unless otherwise noted.

Input Range Vac	Output Voltage Vdc	Output Current Natural Convection A	Max. Output Power W	Input Power at No Load mW	Efficiency %	Model Number
85 - 264	3.3	6	20	40	84	UIS30-33S
85 - 264	5	6	30	40	87	UIS30-5S
85 - 264	7.5	4	30	40	87	UIS30-7.5S
85 - 264	9	3.34	30	40	88	UIS30-9S
85 - 264	12	2.5	30	40	90.5	UIS30-12S
85 - 264	12	2.5	30	40	88	UIS30-12SH
85 - 264	15	2	30	40	90.5	UI30-15S
85 - 264	15	2	30	40	88	UI30-15SH
85 - 264	18	1.67	30	40	88	UI30-18S
85 - 264	24	1.25	30	40	89.5	UI30-24S
85 - 264	28	1.08	30	40	89.5	UI30-28S
85 - 264	36	0.84	30	40	90	UI30-36S
85 - 264	48	0.63	30	40	91.5	UI30-48S
85 - 264	53	0.58	30	40	91	UI30-53S

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Input Specifications			Output Specifications			
Voltage range	85Vac Min., 264Vac Max.	AC input	Output power, W	30 Max.		
	120Vdc Min., 370Vdc Max.	DC input	Initial set voltage accuracy, %	-1.0 Min., 1.0 Max.	230 Vac and full load	
Input frequency, Hz	47Vdc Min., 63Vdc Max.	AC input	Line regulation, %	-0.2 Min., 0.2 Max.	Low line to high line at full load	
Input current, A	0.8 Max.	100Vac and full load	Load regulation, %	-0.7 Min., 0.7 Max.	No load to full load, 3.3Vout, 5Vout	
	0.4 Max.	240Vac and full load		-0.5 Min., 0.5 Max.	Others	
No load input power, mW	40 Typ.	230Vac		-0.6 Min., 0.6 Max.	10% load to 90% load, 3.3Vout, 5Vout	
				-0.4 Min., 0.4 Max.	Others	
Leakage current, μ A	100 Max.	264Vac	Voltage adjustability, %	-10 Min., 10 Max.		
Start up time, ms	1500 Max.		Minimum load, %	0 Typ.		
			Ripple and noise, mVp-p		Measured by 20MHz bandwidth	
Rise time, ms	20 Typ.	Others		50 Typ.	With a 10 μ F/25V 1206 X7R MLCC, 3.3Vout, 5Vout	
	40 Typ.	24Vout, 28Vout, 36Vout		50 Typ.	With a 10 μ F/25V 1206 X7R MLCC, 7.5Vout, 9Vout	
	50 Typ.	48Vout, 53Vout		50 Typ.	With a 1 μ F/50V 1206 X7R MLCC, 12Vout, 15Vout 18Vout	
Hold up time, ms	16 Typ.	115Vac and full load		50 Typ.	With a 1 μ F/50V 1206 X7R MLCC, 24Vout, 28Vout, 26Vout	
			50 Typ.	With a 0.1 μ F/100V 1206 X7R MLCC, 48Vout, 53Vout		
Input inrush current, A	40 Max	230Vac	Temperature coefficient, %/°C	-0.2 Min., 0.2 Max.		
Input protection	T1.6A/250Vac, Internal fuse		Transient response peak deviation, %Vout	3 Max.	Load step from 50-75% change at 2.5A/ μ s	
			Transient response recovery time, μ s	500 Typ.		
			Over voltage protection, %	125 Min., 140 Max.	% of Vout(nom); Automatics recovery	
			Over load protection, %	140 Typ.	% of Iout rated; Hiccup mode	
			Short circuit protection	Continuous, automatic recovery		

General Specifications					
Isolation voltage, Vac	1 minute (Reinforced insulation)	Input to Output	3000 Min.		
Isolation resistance, M Ω	500Vdc		0.1 Min.		
Switching frequency, KHz	230 Vac and full load		30 Min.	45 Typ.	60 Max.

Environmental Specifications					
Operating ambient temperature, °C	Natural convection	With derating	-40 Min.		85 Max.
Storage temperature range, °C			-40 Min.		85 Max.
Operating altitude, m					5000 Max.
Shock	IEC60068-2-27				
Vibration	IEC60068-2-6				
Relative humidity, % RH	Non-condensing		5 Min.		95 Max.

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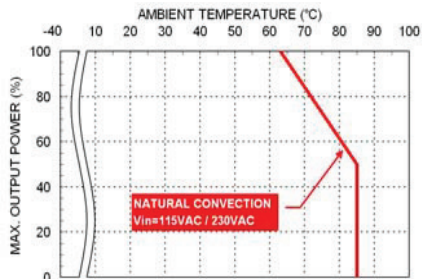
Physical Specifications		
Design meet safety standard	UL/EN/IEC60950-1	
Weight, g	119 (4.20oz)	Connector Type
	106g (3.74oz)	Pin Type
Dimensions, inches (mm)	2.89" × 1.50" × 1.00" (73.3 × 38.1 × 25.4 mm)	Pin Type
	3.95" × 1.50" × 1.00" (100.3 × 38.1 × 25.4 mm)	Terminal Block Type
	3.95" × 1.50" × 1.112" (100.3 × 38.1 × 28.4mm)	Din Rail Type
MTBF	3.341 × 10 ⁶ hrs, MIL-HDBK-217F, Full load	

EMC Specifications			
Specifications	Conditions		Level
EMI conduction and radiation	EN55011, EN55032 and FCC Part 15		Class B
Harmonic currents	EN61000-3-2	Full load	Class A
Voltage flicker	EN61000-3-3		
ESD	EN61000-4-2	Air ± 15kV and Contact ±8kV	Perf. Criteria A
Radiated immunity	EN61000-4-3	20 V/m	Perf. Criteria A
Fast transient	EN61000-4-4	±2kV	Perf. Criteria A
Surge	EN61000-4-5	DM ± 1kV	Perf. Criteria A
Conducted immunity	EN61000-4-6	20 Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8	30 A/m	Perf. Criteria A
Dip and interruptions	EN61000-4-11	230Vac, 50Hz, 30%, 20mS	Perf. Criteria A
		30%, 500mS	Perf. Criteria A
		60%, 1000mS	Perf. Criteria A
		>95%, 10mS	Perf. Criteria A
		>95%, 5000mS	Perf. Criteria B
Damped oscillatory wave	EN61000-4-18	DM ± 1kV and CM ± 2.5kV	Perf. Criteria A

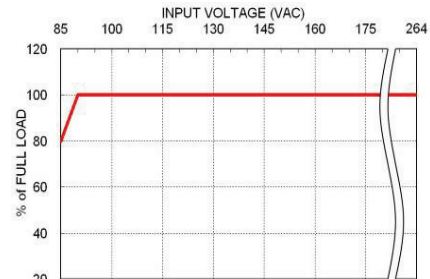
Note:

- Ripple & noise is measured by using 20 MHz bandwidth, measured with a 10µF paralleled with a high-frequency 0.47µF capacitor across each output by full load.

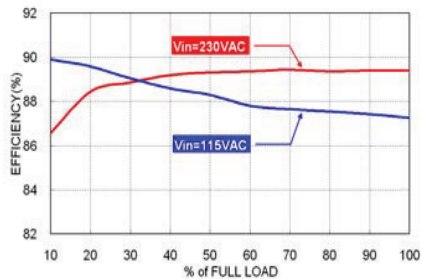
Characteristic Curve



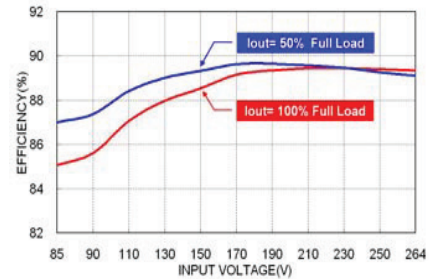
Derating Curve vs. Ambient Temperature



Derating Curve vs. Input Voltage



Efficiency vs. Output Load

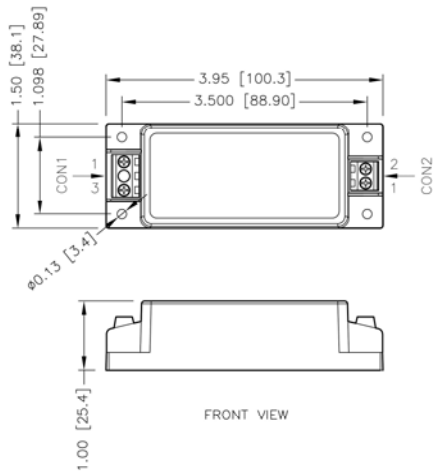


Efficiency vs. Input Voltage

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Mechanical Drawing

Connector Type



CON1-INPUT CONNECTOR

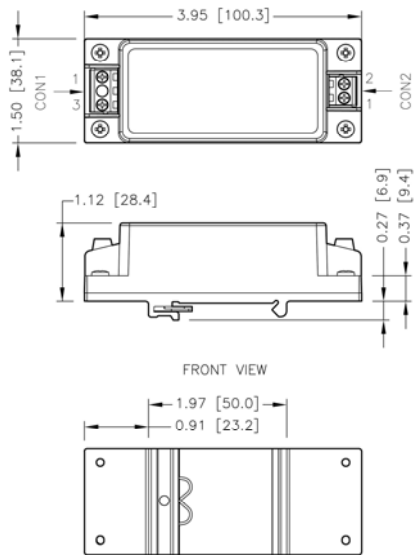
PIN	
1	Line
3	Neutral

CON2-OUTPUT CONNECTOR

PIN	
1	+Vout
2	-Vout

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. Screw locked torque: MAX 5Kgf.cm/0.49N.m

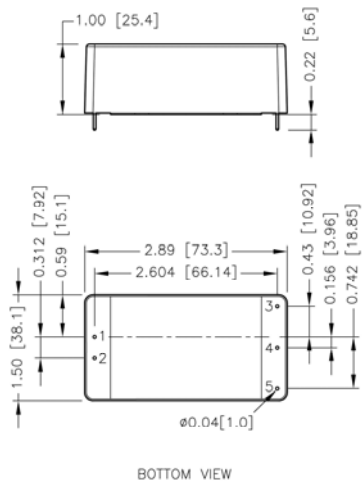
Din Rail Type



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Mechanical Drawing

Pin Type

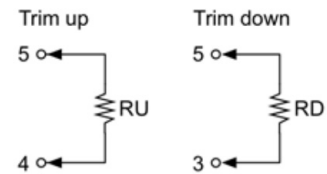


PIN CONNECTION

PIN	
1	Neutral
2	Line
3	+Vout
4	-Vout
5	Trim

EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by using the method shown below.



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 (1.10)