

AC-DC POWER SUPPLY

UP TO 180 WATTS

INDUSTRIAL APPLICATIONS

KUI180 SERIES



FEATURES

- Open Type: 3.0" x 2.0" x 1.4"
- Enclosed Type: 3.6" x 2.44" x 1.75"
- Din Rail Type: 3.6" x 2.44" x 1.75"
- 3,000 Vac Reinforced Insulation
- Adjustable Output Voltage
- Internal EN55032 Class B Filter
- Low Leakage Current
- Low Standby Power
- Operating Altitude 5,000 Meters
- Class I and Class II Protection
- Over Current Protection
- Over Voltage Protection
- Short Circuit Protection
- Over Temperature Protection
- OCVIII
- Meets IEC/ EN/ UL 62368-1

SELECTION GUIDE Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

Input Range Vac	Output Voltage Vdc	Output Current Natural Convection A	Output Current Forced Air Cooling with 10 CFM A	Input Power at No Load W	Efficiency %	Model Number	Max. Capacitor Load μ F
85-264	12	12.5	15	0.15	92	KUI180-12S	10,000
85-264	15	10	12	0.15	92	KUI180-15S	6,800
85-264	18	8.34	10	0.15	92	KUI180-18S	4,700
85-264	24	6.25	7.5	0.15	94	KUI180-24S	2,700
85-264	28	5.36	6.43	0.15	93	KUI180-28S	1,800
85-264	36	4.17	5	0.15	93	KUI180-36S	1,200
85-264	48	3.13	3.75	0.15	93	KUI180-48S	680
85-264	53	2.83	3.4	0.15	93	KUI180-53S	560

PACKAGE OPTIONS:

Open Type: Prefix KUI0180
 Enclosed Type: Prefix KUI180 (Standard)
 DIN Rail Type: Prefix KUID180

APPLICATION OPTIONS:

OVC III (2000M): Suffix "C"
 DC Input: Suffix "G"

PROTECTION TYPE:

Class I Standard: No Suffix
 Class II: Suffix "B"

Input Specifications			Output Specifications		
Rated input voltage, Vac/Vdc	85/120 Min., 264/370 Max.	AC Input/DC Input	Output power, W	180 Max.	Forced air cooling with 10CFM
				150 Max.	Natural convection
Input frequency, Hz	47 Min., 63 Max.	AC Input		220 Max.	Peak power, W
			Output peak power	5 Typ.	Peak power time, s
Input current, A	3 Max.	100Vac and Full Load		20 Typ.	Peak power duty, %
	1.5 Max.	240Vac and Full Load		55 Typ.	Average operation power (% of full load), %
No load input power, W	0.15 Typ.	230Vac	Initial set voltage accuracy, %	-1 Min., 1 Max.	230Vac and full load
Leakage current, μ A	300 Max.	264Vac	Line regulation, %	-0.2 Min., 0.2 Max.	Low line to high line at full load
Power factor	0.95 Min.		Load regulation, %	-0.5 Min., 0.5 Max.	No load to full load
Start up time, ms	1,500 Max.			-0.4 Min., 0.4 Max.	10% load to 90% load
Rise time, ms	15 Typ.		Voltage adjustability, %	-8 Min., 8 Max.	
Hold up time, ms	10 Min.	115Vac and 150W	Minimum load, %	0 Typ.	
Inrush current, A	100 Max.	230 Vac			Measured by 20MHz bandwidth
Input protection	T4.0A/250VAC	Internal fuse	Ripple and noise, mVp-p	120 Typ.	With a 1 μ F/25V 1206 X7R MLCC, 12Vout, 15Vout, 18Vout
				120 Typ.	With a 1 μ F/50V 1206 X7R MLCC, 24Vout, 28Vout, 36Vout
				250 Typ.	With a 0.1 μ F/100V 1206 X7R MLCC, 48Vout, 53Vout
			Temperature coefficient, %/°C	-0.02 Min., 0.02 Max.	
			Transient response		Load step from 100 ~ 75% change at 2.5A/ μ s
				3 Typ.	Peak deviation % Vout
				600 Typ.	Recovery time, μ s

General Specifications					
Over voltage protection	% of Vout(nom); Latch mode		115 Min.		135 Max.
Over load protection	% of Iout rated; Hiccup mode			150 Typ.	
Short circuit protection	Continuous, automatic recovery				
Isolation voltage, Vac	1 minute (Reinforced insulation)	Input to Output	3,000 Min.		
		Input (Output) to F.G.	2,000 Min.		
Isolation resistance, G Ω	500VDC		0.1 Min.		
Switching frequency, kHz	230VAC, Full load				170 Typ.

Environmental Specifications

Operating temperature, °C	With derating	-40 Min.	85 Max.
Storage temperature, °C		-40 Min.	85 Max.
Over temperature protection, °C	Internal thermistor; Hiccup mode		125 Typ.
Operating altitude, m			5,000 Max.
Thermal shock	MIL-STD-810F		
Shock	IEC60068-2-27		
Vibration	IEC60068-2-6		
Relative humidity	5% to 95% RH Non-condensing		

Physical Specifications

Dimensions	3.0" x 2.0" x 1.4" (76.2 x 50.8 x 31.6 mm)	Open Type
	3.6" x 2.44" x 1.75" (91.4 x 62.0 x 44.5 mm)	Enclosed Type
	3.6" x 2.44" x 1.75" (91.4 x 62.0 x 44.5 mm)	Din Rail Type
Weight g	162g (5.70oz)	Open Type
	218g (7.70oz)	Enclosed Type
	240g (8.47oz)	Din Rail Type
Safety meets	IEC/ EN/ UL 62368-1, UL:E193009	
MTBF	MIL-HDBK-217F Ta=25°C, Full load, 1,145 x 10 ⁶ hrs	

EMC Specifications

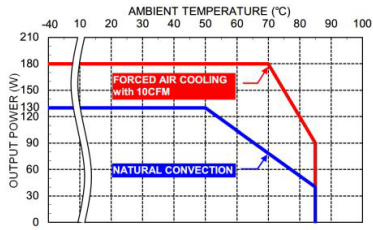
Specifications	Conditions	Level
EMI conducted emissions	EN55032 and FCC Part 15	Class B
EMI radiated emissions		Class A
Harmonic currents	EN61000-3-2 Full Load	Class D
Voltage flicker	EN61000-3-3	
EMS	EN55035	
ESD	EN61000-4-2	Perf. Criteria A
Radiated immunity	EN61000-4-3, 20 V/m	Perf. Criteria A
Fast transient	EN61000-4-4, ±2kV	Perf. Criteria A
Surge	EN61000-4-5, DM±1kV and CM±2kV	Perf. Criteria A
Conducted immunity	EN61000-4-6, 20 Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8, 30A/m	Perf. Criteria A
Dip and interruptions	EN61000-4-11	

Note:

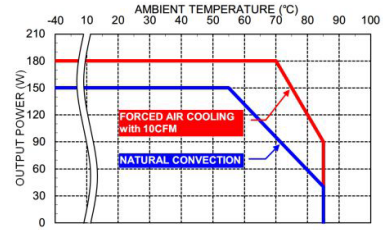
- For further information, please contact Polytron Devices.

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

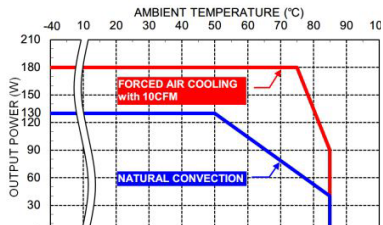
Characteristic Curve



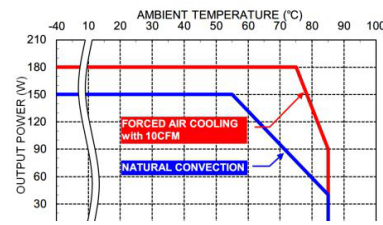
Derating Curve vs. Ambient Temperature
Vin=115VAC Open Type



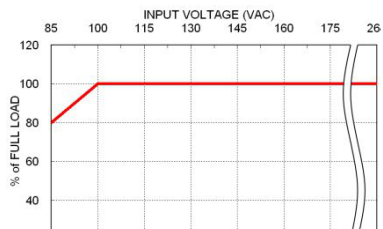
Derating Curve vs. Ambient Temperature
Vin=230VAC Open Type



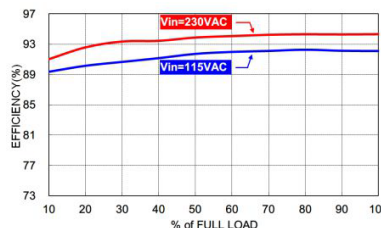
Derating Curve vs. Ambient Temperature
Vin=115VAC Enclosed Type / Din Rail Type



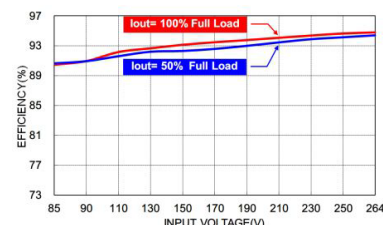
Derating Curve vs. Ambient Temperature
Vin=230VAC Enclosed Type / Din Rail Type



Derating Curve vs. Input Voltage



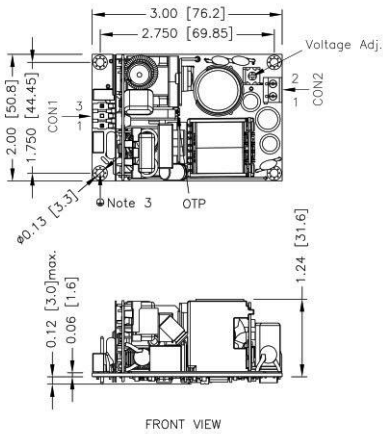
Efficiency vs. Output Load
KUI180-24S with Forced Air Cooling



Efficiency vs. Input Voltage
KUI180-24S with Forced Air Cooling

Mechanical Drawing

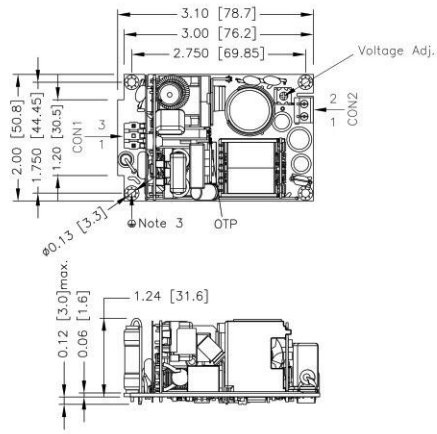
Open Type—AC Input



FRONT VIEW

1. All dimensions in inch [mm]
Tolerance : $x.xx \pm 0.02$ [$x.x \pm 0.5$]
 $x.xxx \pm 0.01$ [$x.xx \pm 0.25$]
2. The CON2 locked torque: MAX 2.5Kgf.cm/0.25N.m
3. The screws holes can be considered as PE connection for CLASS I application.

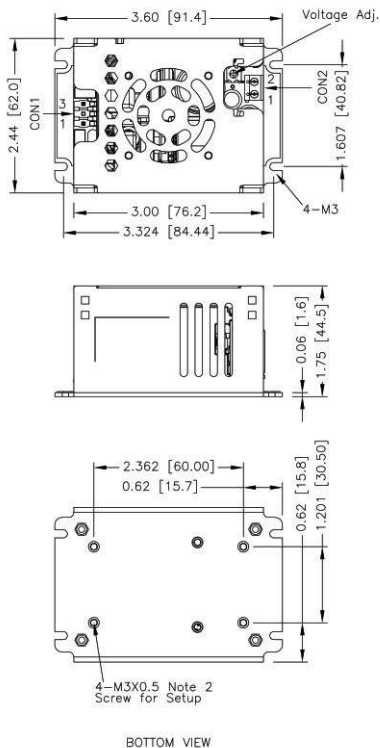
Open Type—DC Input



FRONT VIEW

1. All dimensions in inch [mm]
Tolerance : $x.xx \pm 0.02$ [$x.x \pm 0.5$]
 $x.xxx \pm 0.01$ [$x.xx \pm 0.25$]
2. The CON2 locked torque: MAX 2.5Kgf.cm/0.25N.m
3. The screws holes can be considered as PE connection for CLASS I application.

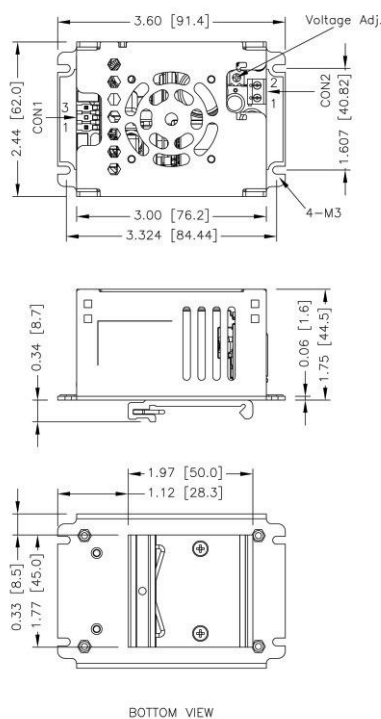
Enclosed Type



BOTTOM VIEW

1. All dimensions in inch [mm]
Tolerance : $x.xx \pm 0.02$ [$x.x \pm 0.5$]
 $x.xxx \pm 0.01$ [$x.xx \pm 0.25$]
2. The screw locked torque: MAX 5Kgf.cm/0.49N.m
3. The CON2 locked torque: MAX 2.5Kgf.cm/0.25N.m

Din Rail Type



BOTTOM VIEW

1. All dimensions in inch [mm]
Tolerance : $x.xx \pm 0.02$ [$x.x \pm 0.5$]
 $x.xxx \pm 0.01$ [$x.xx \pm 0.25$]
2. The CON2 locked torque: MAX 2.5Kgf.cm/0.25N.m

Connector Connections

CON1—Input Connector

Pin Number	AC Input	DC Input
Pin 3	Line	DC+
Pin 1	Neutral	DC-

Mates with:

Molex housing : 09-93-0300, 09-50-3031, 09-50-8031

Molex crimp terminals : 2478

CON2—Output Connector

Pin Number	Output
Pin 1	+Vout
Pin 2	-Vout

Mates with:

Screw locked torque MAX 2.5Kgf.cm/0.25N.m

Wire dimension range 24 ~ 14AWG