

Features

- High Efficiency (Up to 88%)
- Active Power Factor Correction (Typical 0.94)
- Constant Output Current
- Lightning Protection
- Waterproof (IP66)
- Dimming Control
- All-Round Protection: OVP, SCP, OLP
- Comply With UL8750 & EN61347 Safety Regulations



Description

The EUC-040SxxxDS Series operate from a 90 ~ 305 Vac input range. These units will provide up to a 3330 mA of output current and a maximum output voltage of 114 V for 40 W maximum output power. They are designed to be highly efficient and highly reliable. Features include dimming control, over voltage protection, short circuit protection and over load protection.

Models

Output Current	Input Voltage	Max. Output Voltage	Max. Output Power	Typical Efficiency (1)	Power Factor		Model Number With Dimming Control (2, 3)	Model Number Without Dimming Control (2, 3)
					110Vac	220Vac		
3330 mA	90 ~ 305 Vac	11 Vdc	35 W	84%	0.99	0.94	EUC-040S333DS(6)	EUC-040S333PS(6)
2220 mA	90 ~ 305 Vac	16 Vdc	36 W	85%	0.99	0.94	EUC-040S222DS(6)	EUC-040S222PS(6)
1660 mA	90 ~ 305 Vac	23 Vdc	38 W	86%	0.99	0.94	EUC-040S166DS(6)	EUC-040S166PS(6)
1400 mA	90 ~ 305 Vac	25 Vdc	36 W	87%	0.99	0.94	EUC-040S140DS(6)	EUC-040S140PS(6)
1280 mA	90 ~ 305 Vac	29 Vdc	38 W	87%	0.99	0.94	EUC-040S128DS(6)	EUC-040S128PS(6)
1050 mA	90 ~ 305 Vac	36 Vdc	38 W	87%	0.99	0.94	EUC-040S105DS(6)	EUC-040S105PS(6)
700 mA	90 ~ 305 Vac	54 Vdc	38 W	87%	0.99	0.94	EUC-040S070DS(5)	EUC-040S070PS(5)
450 mA	90 ~ 305 Vac	89 Vdc	40 W	88%	0.99	0.94	EUC-040S045DS(4)	EUC-040S045PS(4)
350 mA	90 ~ 305 Vac	114 Vdc	40 W	88%	0.99	0.94	EUC-040S035DS(4)	EUC-040S035PS(4)

- Notes:**
- (1) Measured at full load and 220 Vac input.
 - (2) The DS suffix may be changed to PS to omit the dimming function and remove the three wires associated with that function.
 - (3) A suffix -xxx may be added to denote variations or modifications to the base product, where x can be any alphanumeric character or blank.
 - (4) Non-Class 2 output (USR & CNR).
 - (5) Class 2 output (USR), Non-Class 2 output (CNR).
 - (6) Class 2 output (USR & CNR).

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 V	-	305 V	
Input Frequency	47 Hz	-	63 Hz	
Input AC Current	-	-	0.48 A	Measured at full load and 100 Vac input.
	-	-	0.23 A	Measured at full load and 220 Vac input.
Inrush Current	-	-	20 A	At 230Vac input 25°C Cold Start.

Specifications are subject to changes without notice.

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Range				
$I_o = 3330 \text{ mA}$	3164 mA	-	3497 mA	
$I_o = 2220 \text{ mA}$	2109 mA	-	2331 mA	
$I_o = 1660 \text{ mA}$	1577 mA	-	1743 mA	
$I_o = 1400 \text{ mA}$	1330 mA	-	1470 mA	
$I_o = 1280 \text{ mA}$	1216 mA	-	1344 mA	
$I_o = 1050 \text{ mA}$	998 mA	-	1103 mA	
$I_o = 700 \text{ mA}$	665 mA	-	735 mA	
$I_o = 450 \text{ mA}$	428 mA	-	473 mA	
$I_o = 350 \text{ mA}$	333 mA	-	368 mA	
Output Voltage Range				
$I_o = 3330 \text{ mA}$	4 V	-	11 V	
$I_o = 2220 \text{ mA}$	6 V	-	16 V	
$I_o = 1660 \text{ mA}$	8 V	-	23 V	
$I_o = 1400 \text{ mA}$	10 V	-	25 V	
$I_o = 1280 \text{ mA}$	10 V	-	29 V	
$I_o = 1050 \text{ mA}$	12 V	-	36 V	
$I_o = 700 \text{ mA}$	18 V	-	54 V	
$I_o = 450 \text{ mA}$	30 V	-	89 V	
$I_o = 350 \text{ mA}$	38 V	-	114 V	
Ripple and Noise (pk-pk)	-	-	10% V_o	Load conditions, Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 μF ceramic capacitor and a 10 μF electrolytic capacitor.
Line Regulation	-	-	2%	
Load Regulation	-	-	5%	
Turn-on Delay Time	-	1.7 S	2.0 S	Measured at 110Vac input.
	-	0.7 S	1.0 S	Measured at 220Vac input.
Output Overshoot / Undershoot	-	-	10%	When power on or off.

Note: All specifications are typical at 25 °C unless otherwise stated.

Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Voltage Protection				
$I_o = 3330 \text{ mA}$	15 V	16 V	17 V	Hiccup mode. The power supply shall be self-recovery when the fault condition is removed.
$I_o = 2220 \text{ mA}$	21 V	23 V	25 V	
$I_o = 1660 \text{ mA}$	28 V	30 V	32 V	
$I_o = 1400 \text{ mA}$	31 V	34 V	37 V	
$I_o = 1280 \text{ mA}$	31 V	34 V	37 V	
$I_o = 1050 \text{ mA}$	38 V	41 V	42 V	
$I_o = 700 \text{ mA}$	59 V	59 V	60 V	
$I_o = 450 \text{ mA}$	95 V	98 V	101 V	
$I_o = 350 \text{ mA}$	124 V	127 V	130 V	
Over Load Protection	-	1.25 V_{max}	-	Hiccup mode. The power supply shall be self-recovery when the fault condition is removed.
Short Circuit Protection	No damage shall occur when any output operating in a short circuit condition. The power supply shall be self-recovery when the fault condition is removed.			

Specifications are subject to changes without notice.

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency I _o = 3330 mA I _o = 2220 mA I _o = 1660 mA I _o = 1400 mA I _o = 1280 mA I _o = 1050 mA I _o = 700 mA I _o = 450 mA I _o = 350 mA	82% 83% 84% 85% 85% 85% 85% 86% 86%	83% 84% 85% 86% 86% 86% 86% 87% 87%	- - - - - - - - -	Measured at full load and 110 Vac input.
Efficiency I _o = 3330 mA I _o = 2220 mA I _o = 1660 mA I _o = 1400 mA I _o = 1280 mA I _o = 1050 mA I _o = 700 mA I _o = 450 mA I _o = 350 mA	83% 84% 85% 86% 86% 86% 86% 87% 87%	84% 85% 86% 87% 87% 87% 87% 88% 89%	- - - - - - - - -	Measured at full load and 220 Vac input.
No Load Power Dissipation	≤ 6 W			
MTBF	487,000 hours			For 3330 mA output model, measured at 110Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F).
Life Time	77,000 hours			For 3330 mA output model, measured at 110Vac input, 80%Load and 45°C ambient temperature
Dimensions Inches (L x W x H) Millimeters (L x W x H)	3.74 x 2.76 x 1.26 95 x 70 x 32			
Net Weight	-	300 g	-	

Note: All specifications are typical at 25 °C unless otherwise stated.

Environmental Specifications

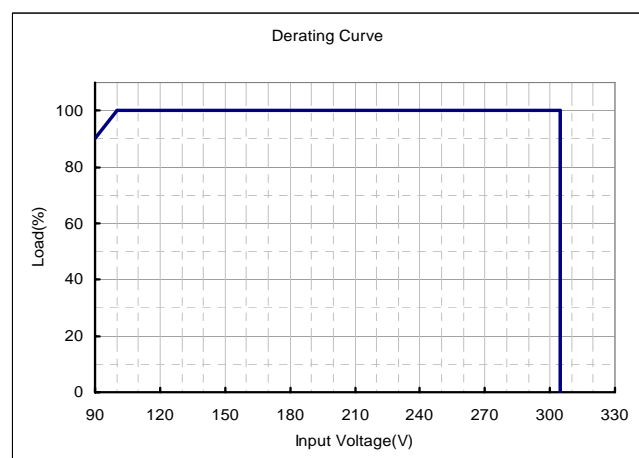
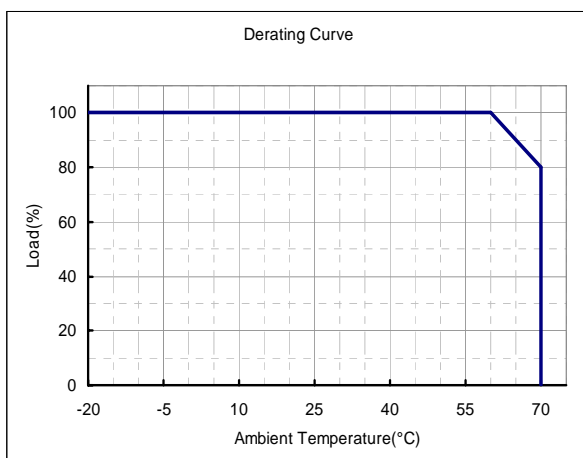
Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-20 °C	-	+70 °C	Humidity: 10% RH to 100% RH
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH

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Safety & EMC Compliance

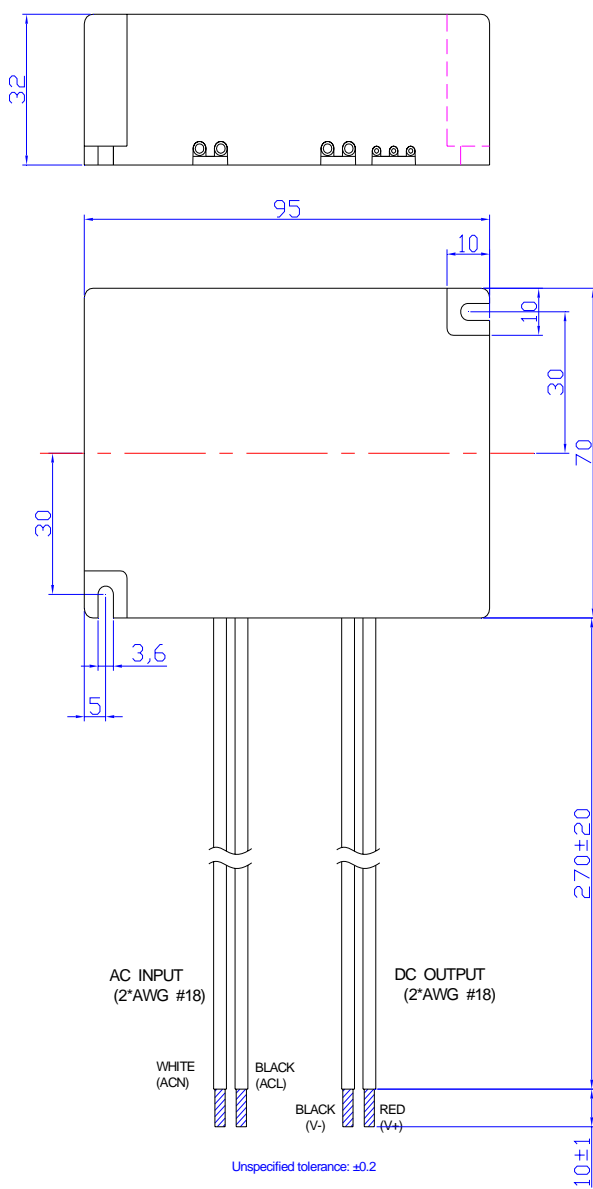
Safety Category	Country	Standard
CUL	USA & Canada	UL8750 Compliance to UL1310 Class2 UL1012 UL935, CAN/CSA-C22.2 No. 0, CSA-C22.2 No. 107.1, CSA-C22.2 No. 250.0
CE	Europe	EN 61347-1, EN61347-2-13
EMI Standards		Notes
EN 55015		Conducted emission Test & Radiated emission Test with 6 dB margin
EMS Standards		Notes
EN 61000-3-2		Harmonic current emissions
EN 61000-3-3		Voltage fluctuations & flicker
EN 61000-4-2		Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3		Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4		Electrical Fast Transient / Burst-EFT
EN 61000-4-6		Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8		Power Frequency Magnetic Field Test
EN 61000-4-11		Voltage Dips
EN 61547		Electromagnetic Immunity Requirements Applies To Lighting Equipment

Derating Curve

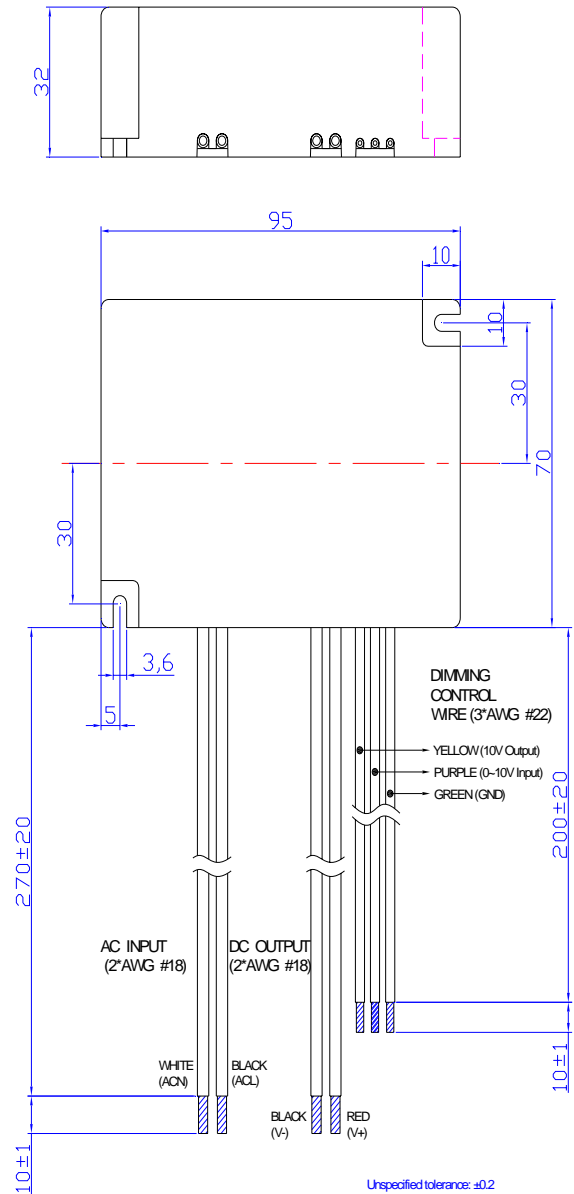


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Mechanical Outline



EUC-040SxxxPS

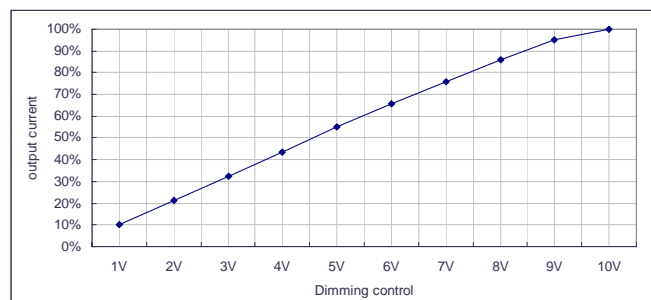
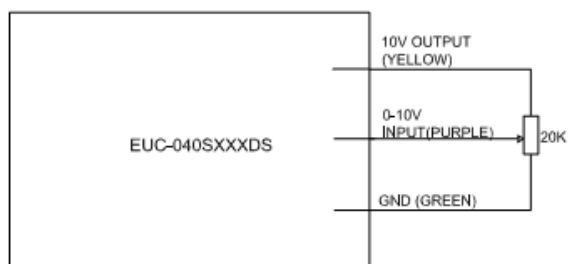


EUC-040SxxxDS

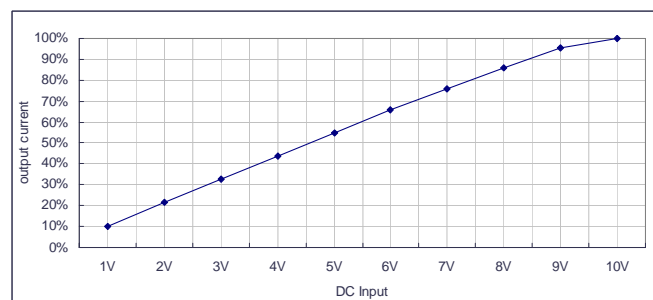
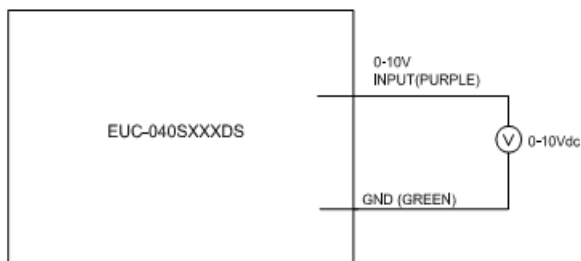
Dimming Control (On secondary side)

Parameter	Min.	Typ.	Max.	Notes
10V output voltage	9.8 V	10 V	10.2 V	
10V output source current	-10 mA	-	2 mA	
Absolute maximum voltage on the 0~10V input pin	-2 V	-	15 V	
Source current on 0~10V input pin	0 mA	-	1 mA	

The dimmer control may be operated from either a potentiometer or from an input signal of 0 – 10 Vdc. Two recommended implementations are provided below.



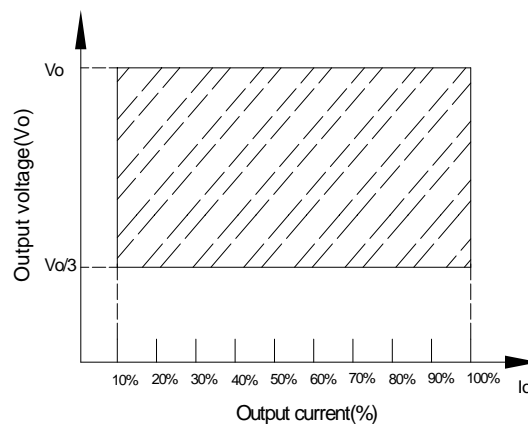
Implementation 1: Potentiometer Control



Implementation 2: DC input

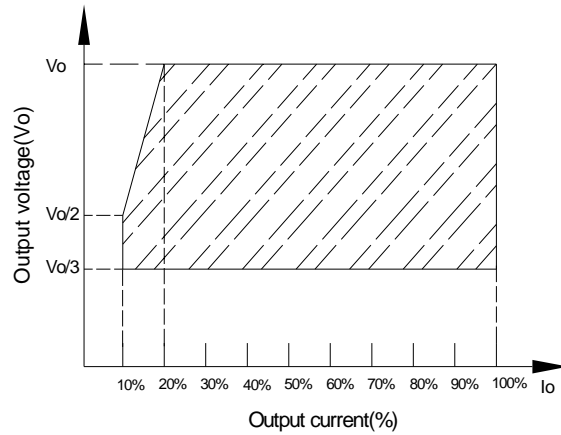
Notes:

- For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 33% of the max. output voltage for any given model).
- If the input voltage is within 90-175Vac, the output current can be varied from 100% down to 10%. (Refer to right figure)



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3. If the input voltage is within 175-305Vac, the output current can be varied from 100% down to 20%. (Refer to right figure)



RoHS Compliance

Our products comply with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

Rev.	Description of Change	Changed Date	Note
V2.1	Change MTBF and Life Time	2009-09-02	
V2.2	1. Change Turn-on Delay Time 2. Add a model of 1280mA.	2009-09-11	
A	Modify the PF value, no-load power dissipation, dimming range	2009-12-03	

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