PWM-60-KN Series

60W PWM Output KNX LED Driver

Case:
191 x 63 x 37.5 mm

Features

- Constant voltage PWM style output with user changeable frequency up to 4KHz compliant IEEE1789-2015 no risk
- Built-in active PFC function
- Class 2 power unit
- Integrated KNX control protocol
- No load power consumption <0.5W
- Fully encapsulated with IP67 level
- Typical lifetime >50000 hours
- 5 years warranty

Specification

INPUT	**Voltage**	90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)	
	Frequency	47 ~ 63 Hz	
	Power Factor	PF>0.97/115VAC, PF>0.96/230VAC, PF>0.94/277VAC at full load (please refer to "Power Factor Characteristic" curve)	
	Total Harmonic Distortion	Total harmonic distortion <20% when output loading ≧ 60% at 115VAC/230VAC input and output loading ≧ 75% at 277VAC input (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)	
	AC Current	1.3A/115VAC 0.65A/230VAC 0.55A/277VAC	
	Inrush Current (Typ.)	Cold start 60A (twidth=270μS measured at 50% Ipeak) at 230VAC; Per NEMA 410	
	Power Factor	PF>0.97/115VAC, PF>0.95/230VAC, PF>0.92/277VAC @ full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)	
	Max. no of PSUs on a 16A Circuit Breaker	9 units (circuit breaker of type B) / 16 units (circuit breaker of type C) at 230VAC	
	Leakage Current	<0.25mA/277VAC	
	Standby Power Consumption	<0.5W	
OUTPUT	**MODEL No.**	**PWM-60-12** ☐	**PWM-60-24** ☐
	DC Voltage	12V	24V
	Rated Current	5A	2.5A
	Rated Power	60W	60W
	Dimming Range	0~100%	
	Efficiency	88%	90%
	PWM frequency	200~4000Hz user changeable via ETS	
	Setup Rise Time	500ms, 80ms/ 115AC or 230VAC	
	Hold Up Time	16ms/115VAC or 230VAC	
PROTECTION	**Over Load**	108 ~ 130% rated output power Hiccup mode, recovers automatically after fault condition is removed	
	Short Circuit	Shut down o/p voltage, re-power on to recover	
	Over Voltage	15 ~ 17V 28 ~ 34V Shut down o/p voltage, re-power on to recover	
	Over Temperature	Shut down o/p voltage, re-power on to recover	
ENVIRONMENT	**Working Temperature**	Tcase=-40 ~ +85°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)	
	Max Case Temperature	Tcase = +85°C	
	Working Humidity	20 ~ 95% RH non-condensing	
	Storage Temp., humidity	-40 ~ +80 °C, 10 ~ 95%RH	
	Temp Coefficient	±0.03%/°C (0 ~ 50°C)	
	Vibration	10 ~ 500Hz, 5G 12 min./1cycle, period for 72 min. each along X, Y, Z axes	
SAFETY & EMC	**Safety Standards**	ENEC EN61347-1, EN61347-2-13, EN62384 independent, GB19510.14,GB19510.1,EAC TP TC 004 approved	
	KNX Standards	Certified protocol	
	Withstand Voltage	I/P-O/P:3.75VAC	
	Isolation Resistance	I/P-O/P:100M Ohms/500VDC/25°C/70% RH	
	EMC Emission	Compliance to EN55015, EN61000-3-2 Class C (@load ≥60%); EN61000-3-3,GB17743 and GB17625.1, EAC TP TC 020	
	EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level (surge immunity Line-Line 2KV), EAC TP TC 020	
OTHERS	**M.T.B.F.**	996K hrs min. Telcordia SR-332 (Bellcore); 271.03K hrs min. MIL-HDBK-217F (25°C)	
	Packing	0.45Kg;30pcs/6.0Kg/1.0CUFT	

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25 °C of ambient temperature.
2. Derating maybe needed under low input voltages. Please check the derating curve for more details.
3. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 75°C or less.
4. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
5. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
6. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models is needed for operating altitude greater than 2000m (6500ft).

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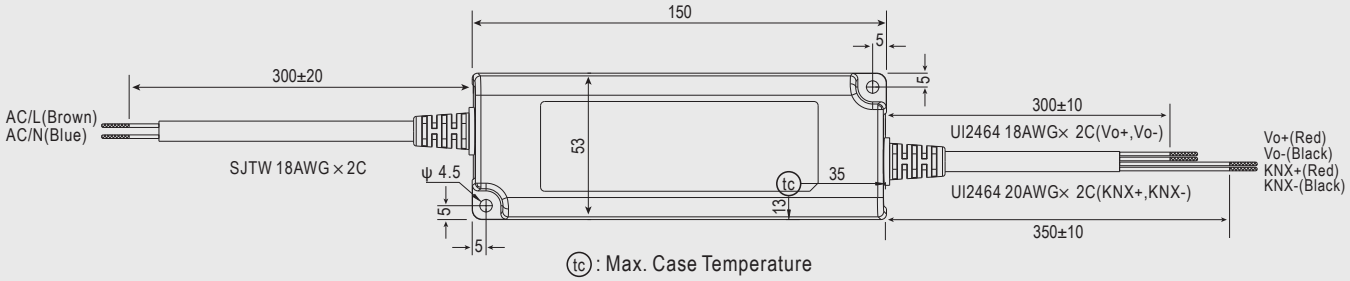
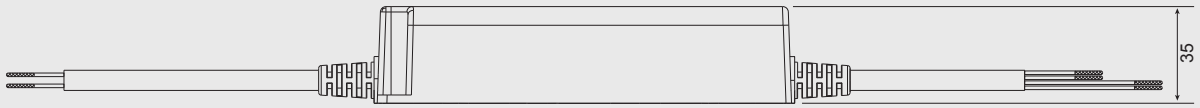
Mechanical Specification

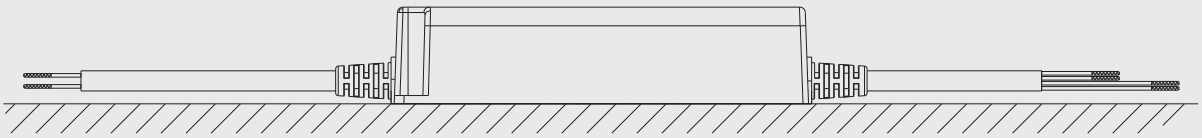
Case No. PWM-60KN Unit:mm



tc : Max. Case Temperature

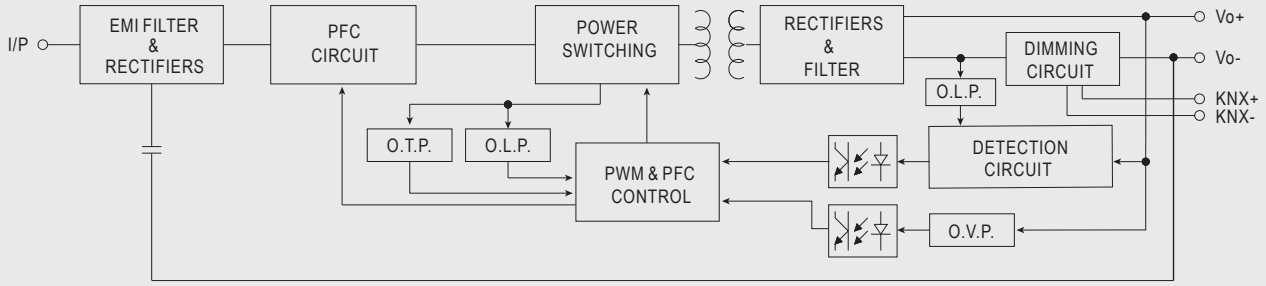


Recommended Mounting Direction



Block Diagram

PFC fosc : 50~120KHz
PWM fosc : 60~130KHz



Note: PWM fosc here is not related to ouput PWM dimming

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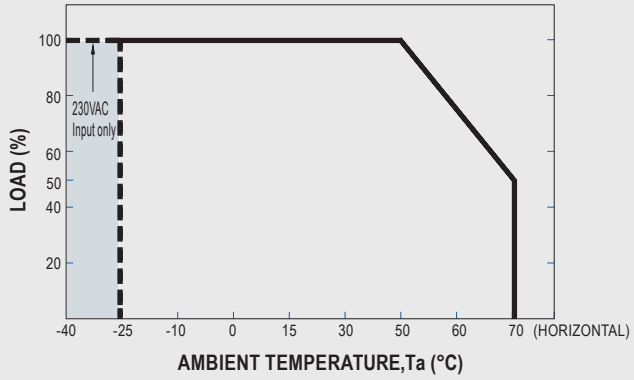
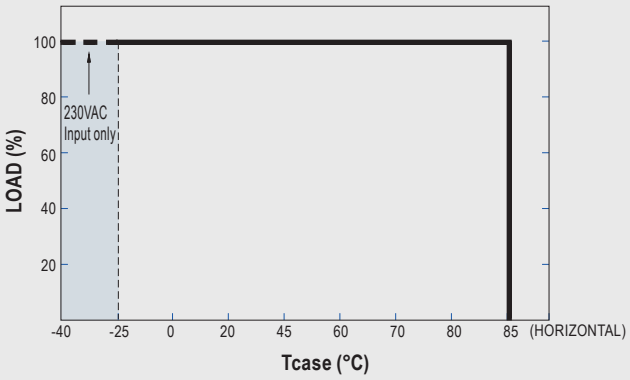
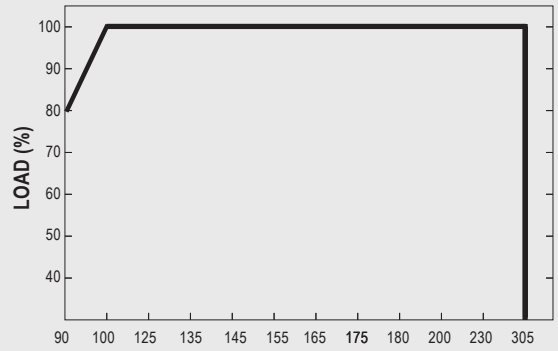
Output Load vs Temperature



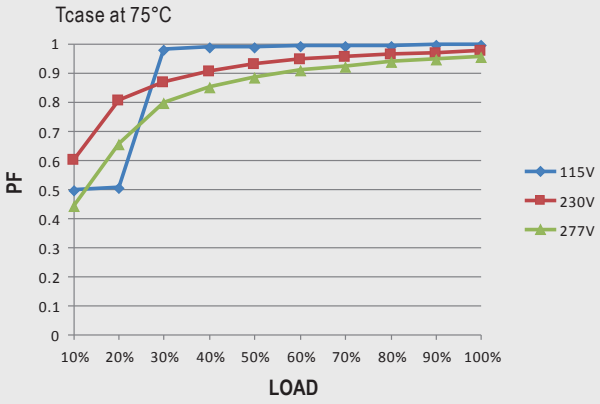


Static Characteristic

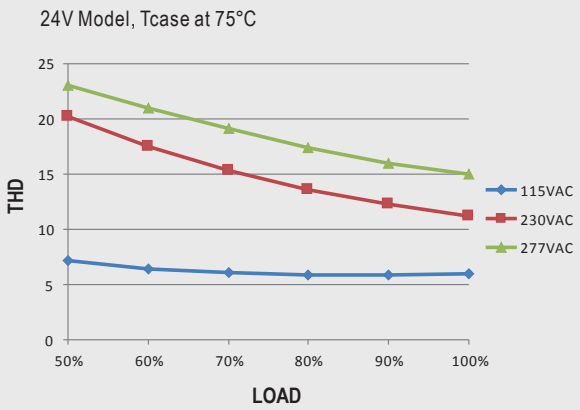


De-rating is needed under low input voltage.

Power Factor (PF) Characteristic

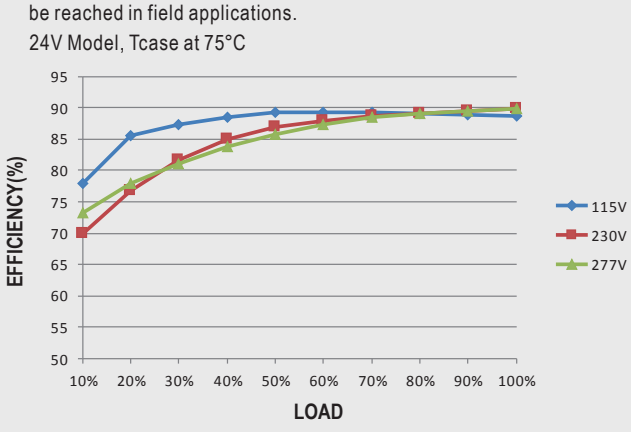


Total Harmonic Distortion (THD)



Efficiency vs Load

PWM-60-KN series possess superior working efficiency that up to 89% can be reached in field applications.



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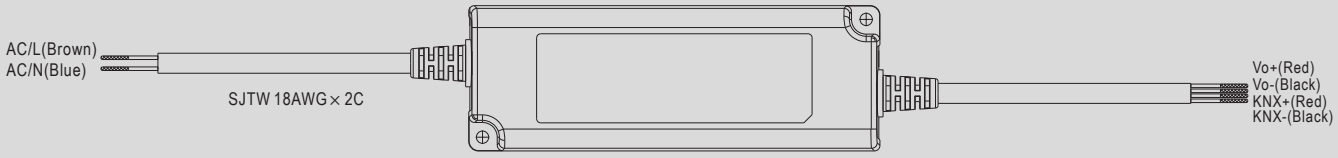
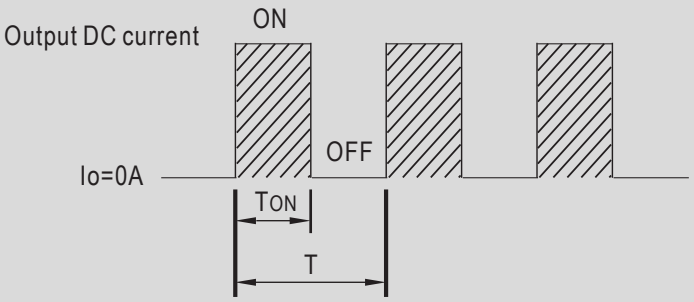
Dimming Operation



Dimming principle for PWM style output

Dimming is achieved by varying the duty cycle of the output current.



$$\text{Duty cycle}(\%) = \frac{T_{ON}}{T} \times 100\%$$

Output PWM frequency up to 4KHz

KNXInterface

- Apply KNX signal between KNX+ and KNX-.
- The application program(database) can be downloaded via Online Catalogs from ETS or via http://www.meanwell.com/productCatalog.aspx

Parametrization options	Description
Switch functions	• Turn on brightness • Dimming speed for turn on/off • Switch telegram and status • Switch on/off delay
Dimming	• Dimming speed for 0~100% • Allow switch on via relative dimming
Brightness value	• Dimming speed for transition brightness values • Permit set switch on and off brightness via value • Brightness value and status
Fault message	• Lamp fault
Other functions	• Reaction on KNX voltage failure/recovery • Power-On level • Dimming curve select(linear/log) • Block function (Block1 & Block2) • Staircase lighting function(multi-stage switch-off) • Output PWM frequency value
General function	• Cyclic monitoring telegram(In operation)
8 Scenes	• Recall and save via KNX with 8-bit telegram
Operating hours & CLO	• Operating hours counter • Constant light out(5 scheduled divisions)
Power consumption feedback	• Power consumption report
Temperature measurement	• Temperature report • Software OTP report (Alarm) • Software OTP, set range of 35°C - 75°C, Turn off the output beyond the set value

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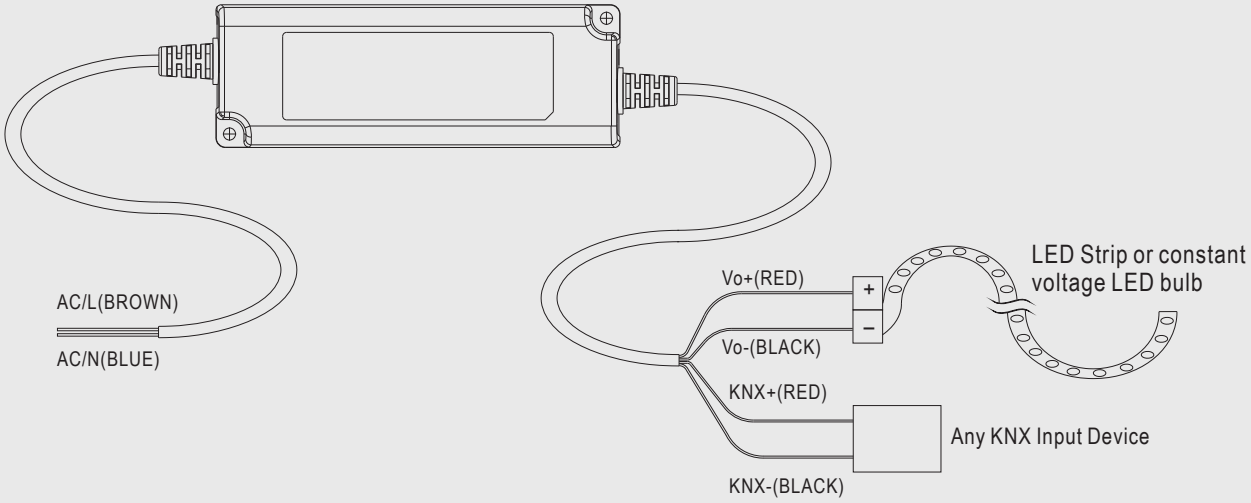
Connection for KNX-type



PWM KN series can be ETS adressing/programming WITHOUT connecting to AC mains

Cautions

- Before commencing any installation or maintenance work, please disconnect the power supply from the utility. Ensure that it cannot be re-connected inadvertently!
- Keep proper ventilation around the unit and do not stack any object on it. Also a 10-15 cm clearance must be kept when the adjacent device is a heat source.
- Mounting orientations other than standard orientation or operate under high ambient temperature may increase the internal component temperature and will require a de-rating in output current.
- Current rating of an approved primary /secondary cable should be greater than or equal to that of the unit. Please refer to its specification.
- For LED drivers with waterproof connectors, verify that the linkage between the unit and the lighting fixture is tight so that water cannot intrude into the system.
- Tc max. is identified on the product label. Please make sure that temperature of Tc point will not exceed limit.
- DO NOT connect "KNX- to Vo-".
- The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.

Life Time