

# PWM-120-KN Series

## 120W 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 II Design
- Integrated KNX control protocol
- No load power consumption <0.5W
- Fully encapsulated with IP67 level
- Typical lifetime >50000 hours
- 5 years warranty



### Specification

INPUT	<b>Voltage</b>	90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)	
	<b>Frequency</b>	47 ~ 63 Hz	
	<b>Total Harmonic Distortion</b>	Total harmonic distortion <20% when output loading $\geq$ 60% at 115VAC/230VAC input and output loading $\geq$ 75% at 277VAC input (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)	
	<b>AC Current</b>	1.3A/115VAC 0.65A/230VAC 0.55A/277VAC	
	<b>Inrush Current (Typ.)</b>	Cold start 60A (twidth=520 $\mu$ s measured at 50% Ipeak) at 230VAC; Per NEMA 410	
	<b>Power Factor</b>	PF>0.97/115VAC, PF>0.95/230VAC, PF>0.92/277VAC @ full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)	
	<b>Max. no of PSUs on a 16A Circuit Breaker</b>	4 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC	
		<b>Leakage Current</b>	<0.25mA/277VAC
	<b>Standby Power Consumption</b>	<0.5W	
OUTPUT	<b>MODEL No.</b>	PWM-120-12 <input type="checkbox"/>	PWM-120-24 <input type="checkbox"/>
	<b>DC Voltage</b>	12V	24V
	<b>Rated Current</b>	10A	5A
	<b>Rated Power</b>	120W	120W
	<b>Dimming Range</b>	0~100%	
	<b>Efficiency</b>	88%	90%
	<b>PWM frequency</b>	200~4000Hz user changeable via ETS	
	<b>Setup Rise Time</b>	500ms, 80ms/ 230VAC or 115AC	
	<b>Hold Up Time</b>	16ms/230VAC or 115VAC	
PROTECTION	<b>Over Load</b>	108 ~ 130% rated output power Hiccup mode, recovers automatically after fault condition is removed	
	<b>Short Circuit</b>	Shut down o/p voltage, re-power on to recover	
	<b>Over Voltage</b>	15 ~ 17V	28 ~ 34V
	<b>Over Temperature</b>	Shut down o/p voltage, re-power on to recover	
ENVIRONMENT	<b>Working Temperature</b>	Tcase=-40 ~ +90°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)	
	<b>Max Case Temperature</b>	Tcase = +90°C	
	<b>Working Humidity</b>	20 ~ 95% RH non-condensing	
	<b>Storage Temp., humidity</b>	-40 ~ +80 °C, 10 ~ 95%RH	
	<b>Temp Coefficient</b>	$\pm$ 0.03%/°C (0 ~ 45°C, except 0 ~ 40°C for 12V)	
	<b>Vibration</b>	10 ~ 500Hz, 5G 12 min./1cycle, period for 72 min. each along X, Y, Z axes	
SAFETY & EMC	<b>Safety Standards</b>	ENEC EN61347-1, EN61347-2-13, EN62384 independent, GB19510.14, GB19510.1, EAC TP TC 004 approved	
	<b>KNX Standards</b>	Certified protocol	
	<b>Withstand Voltage</b>	I/P-O/P:3.75VAC	
	<b>Isolation Resistance</b>	I/P-O/P:100M Ohms/500VDC/25°C/70% RH	
	<b>EMC Emission</b>	Compliance to EN55015, EN61000-3-2 Class C (@load $\geq$ 60%); EN61000-3-3, GB17743 and GB17625.1, EAC TP TC 020	
	<b>EMC Immunity</b>	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	<b>M.T.B.F.</b>	860.4K hrs min. Telcordia SR-332 (Bellcore); 228.7K hrs min. MIL-HDBK-217F (25°C)	
	<b>Packing</b>	0.80Kg; 15pcs/13.0Kg/0.87CUFT	

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).

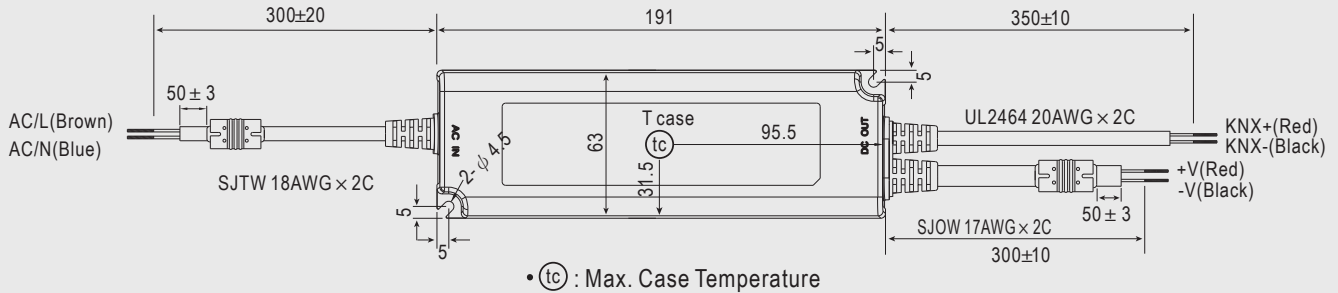
# PWM-120-KN Series

## 120W PWM Output KNX LED Driver



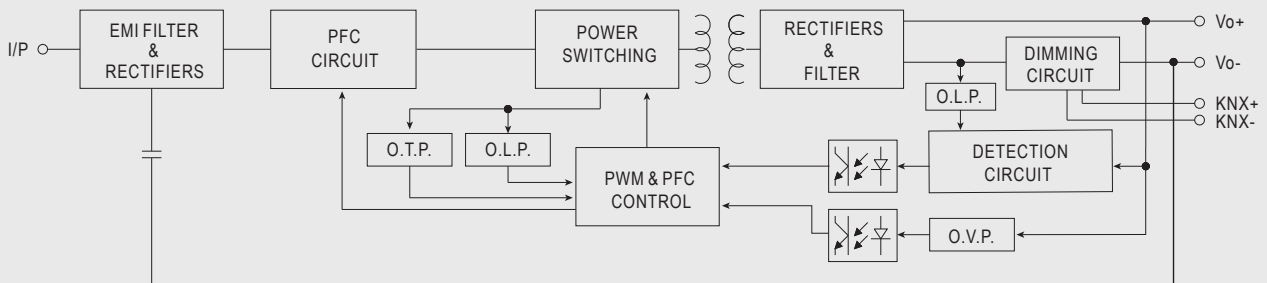
### Mechanical Specification

Case No. PWM-120-KN Unit:mm



### Block Diagram

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



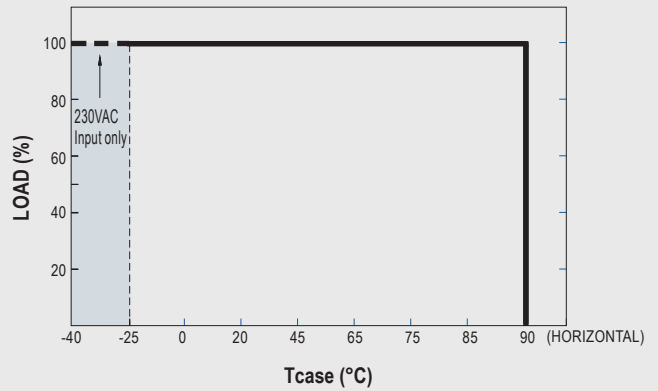
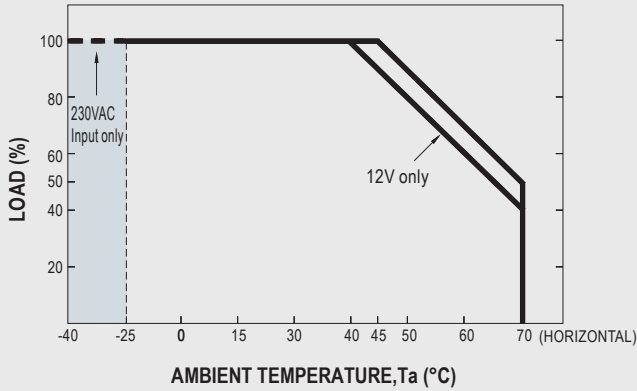
Note: PWM fosc here is not related to output PWM dimming

# PWM-120-KN Series

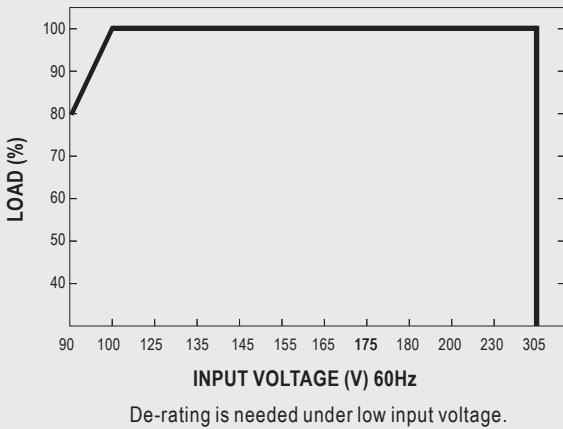
## 120W PWM Output KNX LED Driver



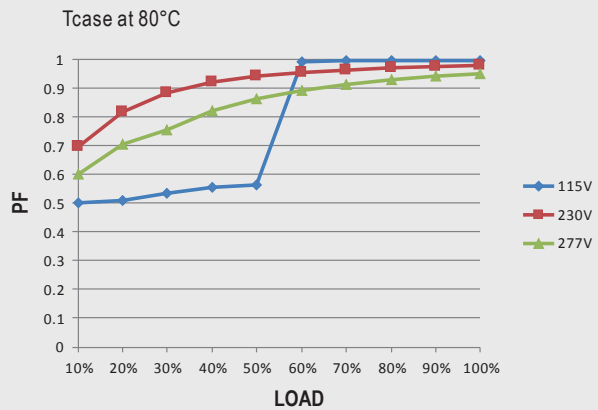
### Output Load vs Temperature



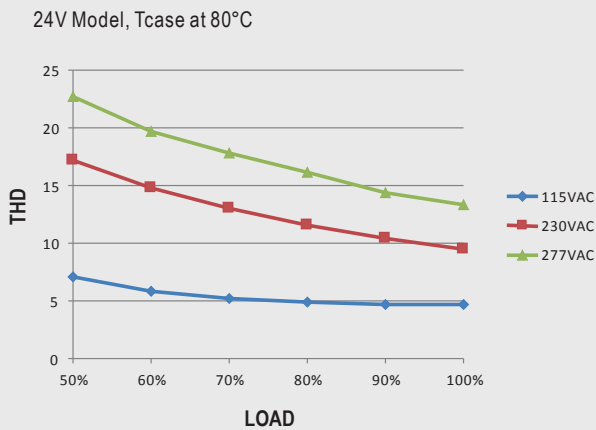
### Static Characteristic



### Power Factor (PF) Characteristic



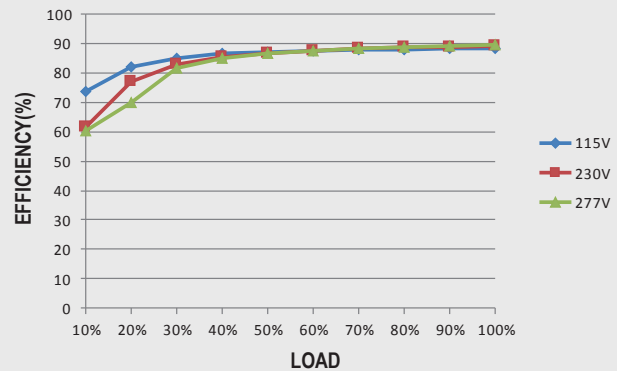
### Total Harmonic Distortion (THD)



### Efficiency vs Load

PWM-120-KN series possess superior working efficiency that up to 90% can be reached in field applications.

24V Model, Tcase at 80°C

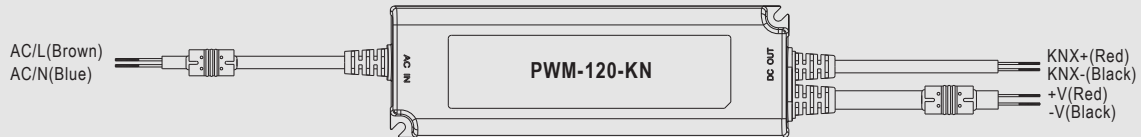


# PWM-120-KN Series

## 120W PWM Output KNX LED Driver

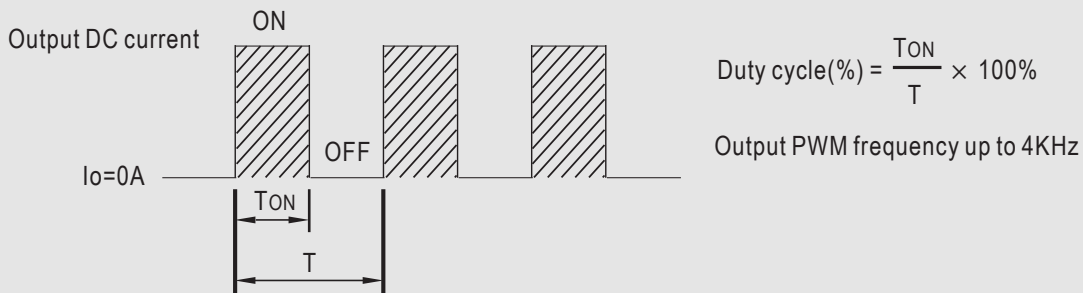


### Dimming Operation



#### Dimming principle for PWM style output

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



#### 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>

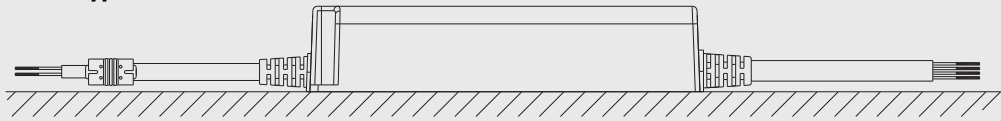
Parametrization options	Description
Switch functions	<ul style="list-style-type: none"> <li>• Turn on brightness</li> <li>• Dimming speed for turn on/off</li> <li>• Switch telegram and status</li> <li>• Switch on/off delay</li> </ul>
Dimming	<ul style="list-style-type: none"> <li>• Dimming speed for 0~100%</li> <li>• Allow switch on via relative dimming</li> </ul>
Brightness value	<ul style="list-style-type: none"> <li>• Dimming speed for transition brightness values</li> <li>• Permit set switch on and off brightness via value</li> <li>• Brightness value and status</li> </ul>
Fault message	<ul style="list-style-type: none"> <li>• Lamp fault</li> </ul>
Other functions	<ul style="list-style-type: none"> <li>• Reaction on KNX voltage failure/recovery</li> <li>• Power-On level</li> <li>• Dimming curve select(linear/log)</li> <li>• Block function(Block1&amp;Block2)</li> <li>• Staircase lighting function(multi-stage switch-off)</li> <li>• Output PWM frequency value</li> </ul>
General function	<ul style="list-style-type: none"> <li>• Cyclic monitoring telegram(In operation)</li> </ul>
8 Scenes	<ul style="list-style-type: none"> <li>• Recall and save via KNX with 8-bit telegram</li> </ul>
Operating hours & CLO	<ul style="list-style-type: none"> <li>• Operating hours counter</li> <li>• Constant light out(5 scheduled divisions)</li> </ul>
Power consumption feedback	<ul style="list-style-type: none"> <li>• Power consumption report</li> </ul>
Temperature measurement	<ul style="list-style-type: none"> <li>• Temperature report</li> <li>• Software OTP report(Alarm)</li> <li>• Software OTP, set range of 35°C ~ 75°C, Turn off the output beyond the set value</li> </ul>

# PWM-120-KN Series

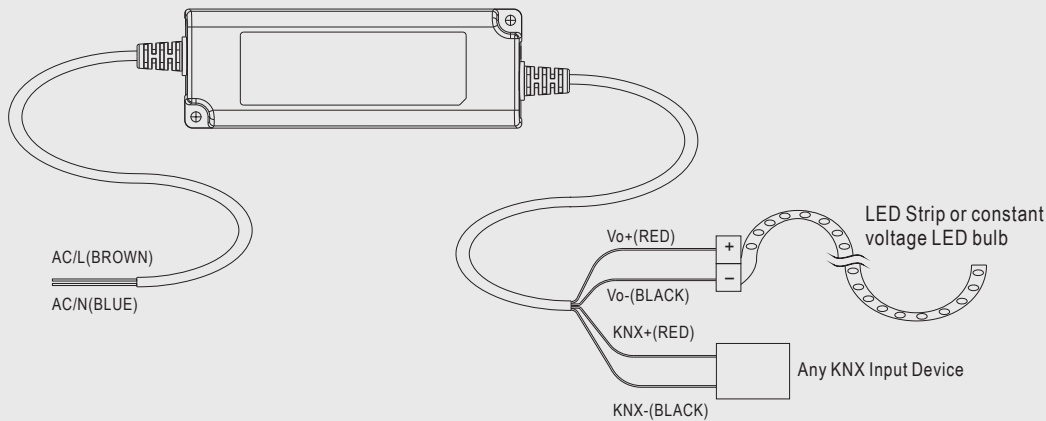
## 120W PWM Output KNX LED Driver



### Connection for KNX-type



### Connection for KNX-type



PWM KN series can be ETS addressing/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

