



■ Features

- Constant Voltage PWM style output with user changeable frequency up to 4KHz compliant IEEE1789-2015 no risk
- Plastic housing with class II design
- Built-in active PFC function
- standby power consumption < 0.5W
- Integrated KNX control portocol
- No need KNX-DALI gateway
- Typical lifetime > 50000 hours
- 5 years warranty

■ Applications

- LED strip lighting
- Indoor LED lighting
- LED decorative lighting
- LED architecture lighting

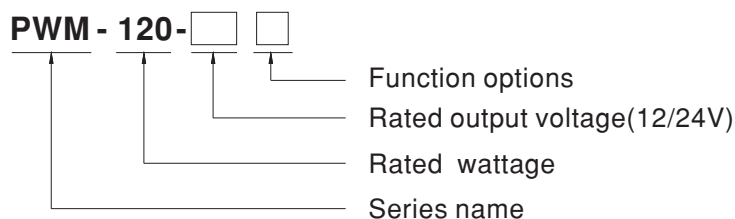
■ Description

PWM KN series is a 120W AC/DC LED driver featuring the constant voltage mode with PWM style output, which is able to maintain the colour temperature and the brightness homogeneity when driving all kinds of LED strips and constant voltage LED bulbs. The built-in KNX interface is to avoid using the complicated KNX-DALI gateway.

PWM KN operates from 90~305VAC and offers two models with output voltage 12V & 24V. Thanks to the high efficiency up to 90%, with the fanless design, the entire series is able to operate for -40°C ~ +90°C case temperature under free air convection.

The minimal dimming level low to 0.5% is suitable for low light level applications e.g. cinema. The output frequency is changeable up to 4KHz to complaint IEEE 1789-2015 no risk requirement providing a great solution for health concern due to light flickering.

■ Model Encoding



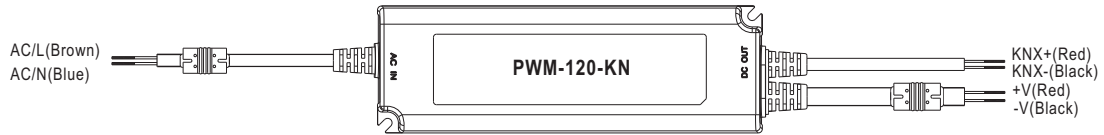
| Type | Function | Note |
|-------|---|------------|
| KN | KNX control technology | In stock |
| KNBST | KNX control technology with BST14 connector | by request |



SPECIFICATION

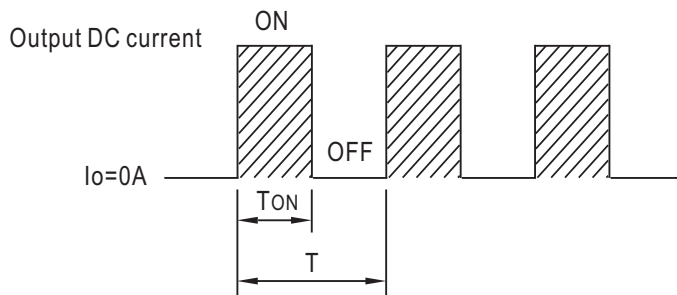
| MODEL | | PWM-120-12 <input type="checkbox"/> | PWM-120-24 <input type="checkbox"/> |
|--------------|--|--|-------------------------------------|
| OUTPUT | DC VOLTAGE | 12V | 24V |
| | RATED CURRENT | 10A | 5A |
| | RATED POWER | 120W | 120W |
| | DIMMING RANGE | 0 ~ 100% | |
| | PWM FREQUENCY (Typ.) | 200~4000Hz user changable via ETS | |
| | SETUP, RISE TIME Note.2 | 500ms, 80ms/ 230VAC or 115VAC | |
| | HOLD UP TIME (Typ.) | 16ms/230VAC or 115VAC | |
| INPUT | VOLTAGE RANGE Note.3 | 90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section) | |
| | FREQUENCY RANGE | 47 ~ 63Hz | |
| | POWER FACTOR (Typ.) | PF>0.97/115VAC, PF>0.96/230VAC, PF>0.94/277VAC @ full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section) | |
| | TOTAL HARMONIC DISTORTION | THD< 20% (@load≥60%/115VAC, 230VAC; @load≥75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION" section) | |
| | EFFICIENCY (Typ.) | 88% | 90% |
| | AC CURRENT (Typ.) | 1.3A / 115VAC 0.65A / 230VAC 0.55A / 277VAC | |
| | INRUSH CURRENT (Typ.) | COLD START 60A(twidth=520μs measured at 50% Ipeak) at 230VAC; Per NEMA 410 | |
| | MAX. NO. of PSUs on 16A CIRCUIT BREAKER | 4 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC | |
| | LEAKAGE CURRENT | <0.25mA / 277VAC | |
| | STANDY POWER CONSUMPTION | <0.5W | |
| PROTECTION | OVERLOAD | 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 |
| | OVER TEMPERATURE | Shut down o/p voltage, re-power on to recover | |
| ENVIRONMENT | WORKING TEMP. | Tcase=-40 ~ +90°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section) | |
| | MAX. CASE TEMP. | Tcase=+90°C | |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +80°C, 10 ~ 95% RH | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 45°C, except 0 ~ 40°C for 12V) | |
| | VIBRATION | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes | |
| SAFETY & EMC | SAFETY STANDARDS Note.5 | 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: 3.75KVAC | |
| | ISOLATION RESISTANCE | I/P-O/P: 100M Ohms / 500VDC / 25°C / 70% RH | |
| | EMC EMISSION Note.6 | 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 | MTBF | 860.4K hrs min. Telcordia SR-332 (Bellcore); 228.7K hrs min. MIL-HDBK-217F (25°C) | |
| | DIMENSION | 191*63*37.5mm (L*W*H) | |
| | PACKING | 0.80Kg; 15pcs/13.0Kg/0.87CUFT | |
| NOTE | <ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time. The driver 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. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (C) point (or TMP, per DLC), is about 75°C or less. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). For any application note and IP water proof function installation caution, please refer our user manual before using. https://www.meanwell.com/Upload/PDF/LED_EN.pdf | | |

■ DIMMING OPERATION



※ Dimming principle for PWM style output

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



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

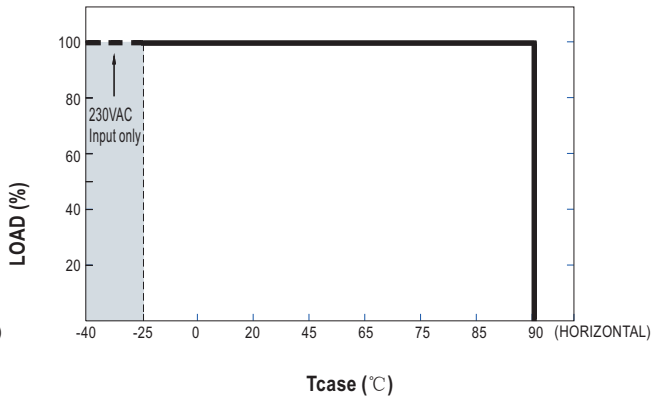
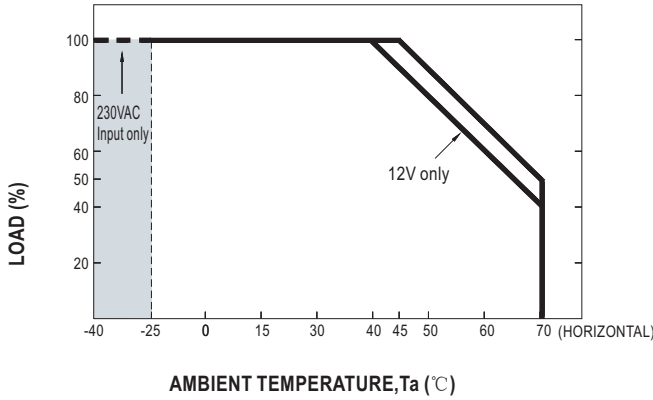
Output PWM frequency up to 4KHz

※ KNXInterface

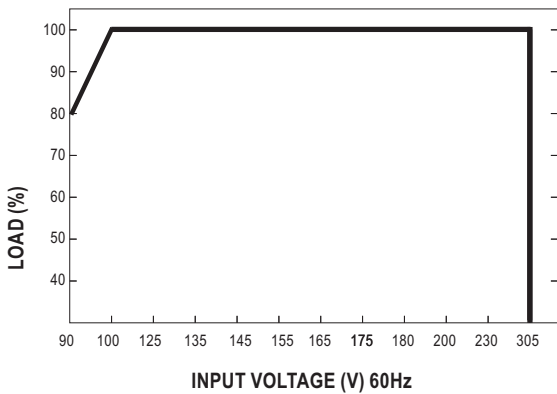
- Apply KNX signal between KNX+ and KNX-.
- The application program(database) can be downloaded via Online Catalogs from ETS or via <http://www.meanwell.com/productCatalog.aspx>

| Parametrization options | Description |
|----------------------------|--|
| Switch functions | <ul style="list-style-type: none"> • Turn on brightness • Dimming speed for turn on/off • Switch telegram and status • Switch on/off delay |
| Dimming | <ul style="list-style-type: none"> • Dimming speed for 0~100% • Allow switch on via relative dimming |
| Brightness value | <ul style="list-style-type: none"> • Dimming speed for transition brightness values • Permit set switch on and off brightness via value • Brightness value and status |
| Fault message | <ul style="list-style-type: none"> • Lamp fault |
| Other functions | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Cyclic monitoring telegram(In operation) |
| 8 Scenes | <ul style="list-style-type: none"> • Recall and save via KNX with 8-bit telegram |
| Operating hours & CLO | <ul style="list-style-type: none"> • Operating hours counter • Constant light out(5 scheduled divisions) |
| Power consumption feedback | <ul style="list-style-type: none"> • Power consumption report |
| Temperature measurement | <ul style="list-style-type: none"> • Temperature report • Software OTP report(Alarm) • Software OTP,set range of 35°C-75°C, Turn off the output beyond the set value |

OUTPUT LOAD vs TEMPERATURE

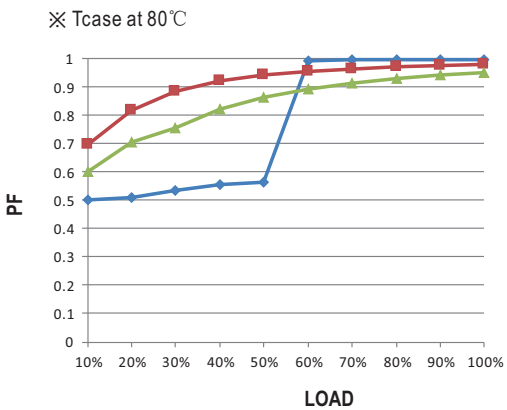


STATIC CHARACTERISTIC



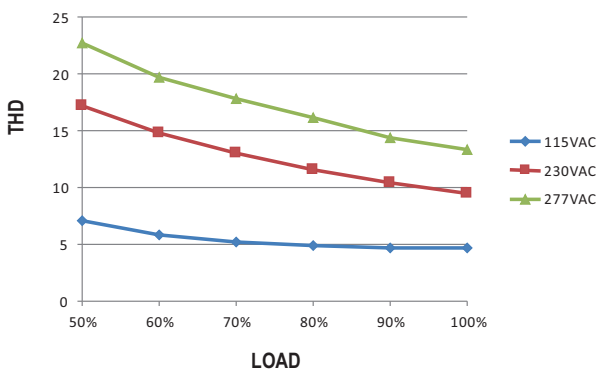
※ De-rating is needed under low input voltage.

POWER FACTOR (PF) CHARACTERISTIC



TOTAL HARMONIC DISTORTION (THD)

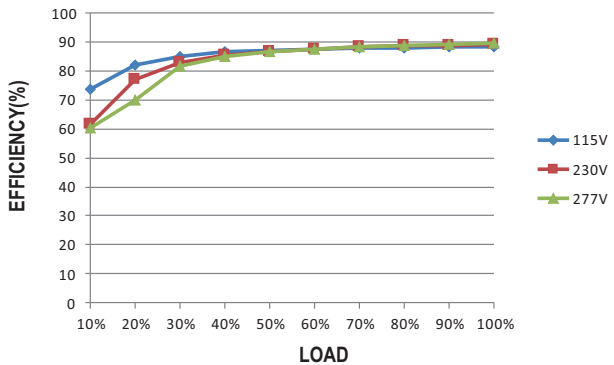
※ 24V Model, Tcase at 80°C



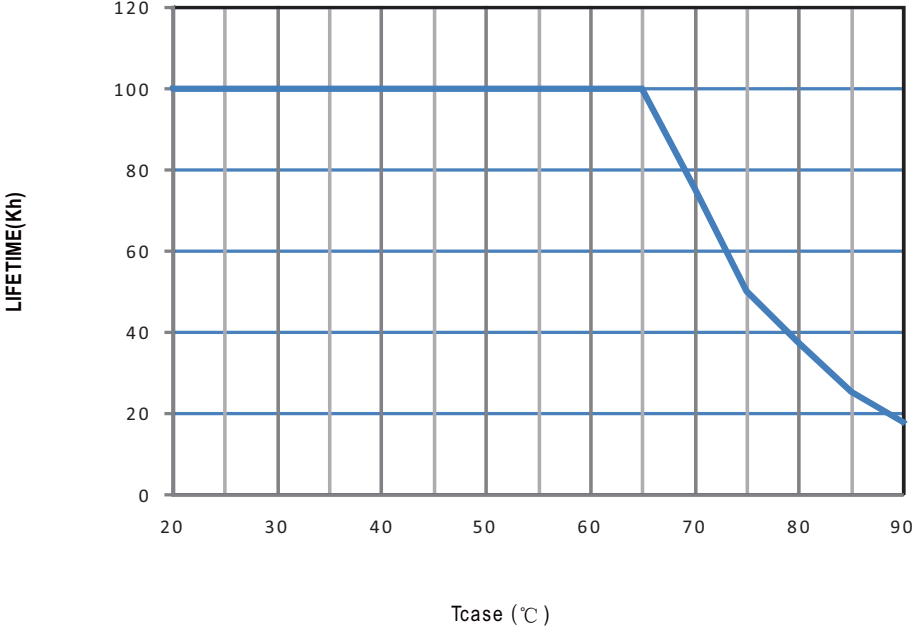
EFFICIENCY vs LOAD

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

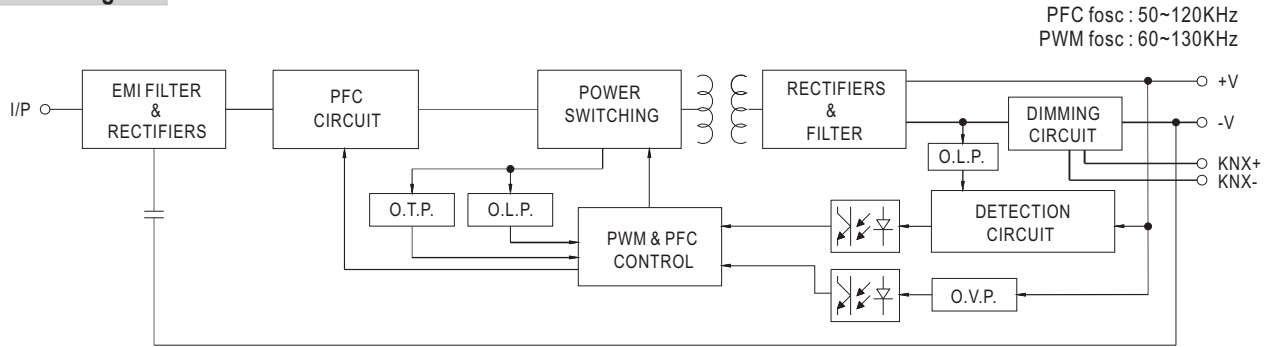
※ 24V Model, Tcase at 80°C



■ LIFE TIME



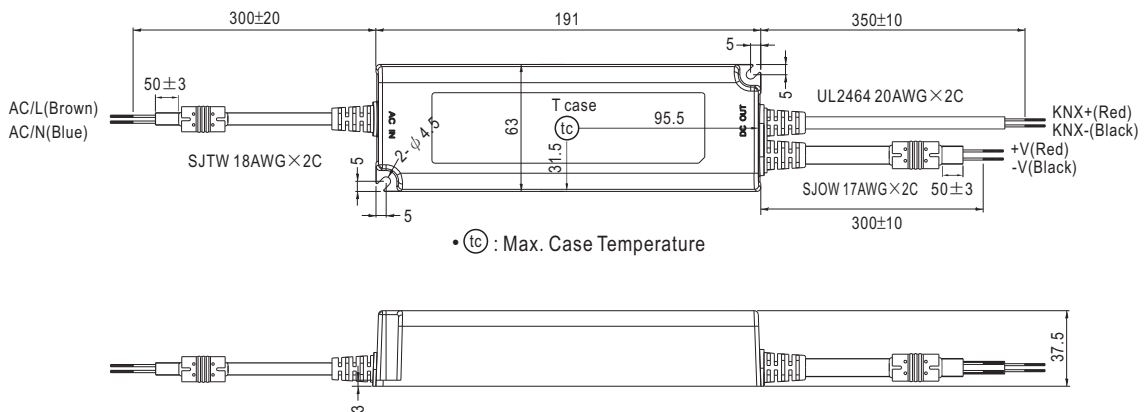
Block Diagram



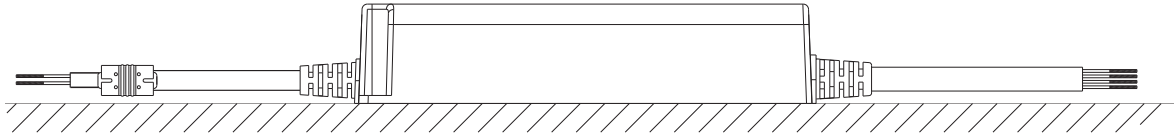
Note: PWM fosc here is not related to output PWM dimming

Mechanical Specification

Case No. PWM-120-KN Unit:mm

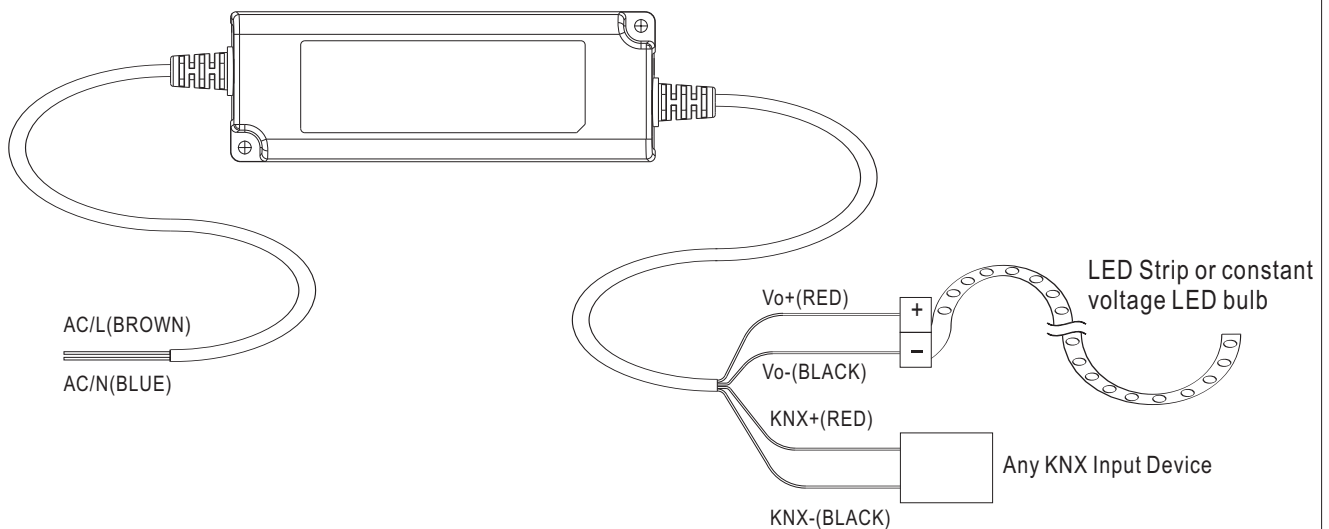


Recommend Mounting Direction



Installation Manual

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.
- For more information about installation, Please refer to : <http://www.meanwell.com/manual.html> for details.