



Features:

- Universal AC input / Full range (up to 305VAC)
- · Built-in active PFC function
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP64 design for indoor or outdoor installations
- Class 2 power unit
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp locations or outdoor application
- 3 years warranty

















HLN-40H-12 A : IP64 rated. Output voltage and constant current level can be adjusted through internal potentiometer.

B: IP64 rated. Constant current level adjustable through output cable with 1~10Vdc or 10V PWM signal or resistance.

SPECIFICATION

| MODEL | | HLN-40H-12 | HLN-40H-15 | HLN-40H-20 | HLN-40H-24 | HLN-40H-30 | HLN-40H-36 | HLN-40H-42 | HLN-40H-48 | HLN-40H-54 | | | |
|-------------|--|---|-----------------|-----------------|-----------------|------------------|-------------------|-----------------|-------------|-------------|--|--|--|
| | DC VOLTAGE | 12V | 15V | 20V | 24V | 30V | 36V | 42V | 48V | 54V | | | |
| OUTPUT | CONSTANT CURRENT REGION Note.4 | 7.2 ~12V | 9 ~ 15V | 12 ~ 20V | 14.4 ~ 24V | 18 ~ 30V | 21.6 ~ 36V | 25.2 ~ 42V | 28.8 ~ 48V | 32.4 ~ 54V | | | |
| | RATED CURRENT | 3.33A | 2.67A | 2A | 1.67A | 1.34A | 1.12A | 0.96A | 0.84A | 0.75A | | | |
| | RATED POWER | 40W | 40W | 40W | 40.1W | 40.2W | 40.3W | 40.3W | 40.3W | 40.5W | | | |
| | RIPPLE & NOISE (max.) Note.2 | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 200mVp-p | 300mVp-p | 300mVp-p | 300mVp-p | | | |
| | VOLTAGE ADJ. RANGE Note.6 | | | 17 ~ 22V | 22 ~ 27V | 27 ~ 33V | 33 ~ 40V | 40 ~ 46V | 44 ~ 53V | 49 ~ 58V | | | |
| | | | | otentiometer | or through outp | ut cable | | | | | | | |
| | CURRENT ADJ. RANGE | 2 ~ 3.33A | 1.6 ~ 2.67A | 1.2 ~ 2A | 1 ~ 1.67A | 0.8 ~ 1.34A | 0.67 ~ 1.12A | 0.58 ~ 0.96A | 0.5 ~ 0.84A | 0.45 ~ 0.75 | | | |
| | VOLTAGE TOLERANCE Note.3 | ±2.5% | ±2.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | | | |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | | | |
| | LOAD REGULATION | ±2.0% | ±1.5% | ±1.0% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | | | |
| | | | s / 115VAC at f | | 000ms, 80ms / | | | | | | | | |
| | HOLD UP TIME (Typ.) | 16ms/230VAC 16ms/115VAC at full load | | | | | | | | | | | |
| | | 90 ~ 305VAC | | | | | | | | | | | |
| | FREQUENCY RANGE | 90 ~ 305VAC 127 ~ 431VDC 47 ~ 63Hz | | | | | | | | | | | |
| | POWER FACTOR (Typ.) | PF>0.98/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load (Please refer to "Power Factor Characteristic" curve) | | | | | | | | | | | |
| INPUT | EFFICIENCY (Typ.) | 86.5% | 86.5% | 87.5% | 88% | 88.5% | 88.5% | 88.5% | 89% | 89% | | | |
| • . | AC CURRENT (Typ.) | | | | 0.23A / 277VA | | 00.070 | 00.070 | 1 00 70 | 0070 | | | |
| | INRUSH CURRENT(Typ.) | 0.43A / 115VAC | | | | | | | | | | | |
| | LEAKAGE CURRENT | | | | | | | | | | | | |
| | ELAKAGE GOKKENT | <0.75mA / 277VAC | | | | | | | | | | | |
| | OVER CURRENT Note.4 | 95 ~ 108% Pertodice the Constant surrent limiting, recovery outernatically after fault condition is removed. | | | | | | | | | | | |
| | | Protection type: Constant current limiting, recovers automatically after fault condition is removed Hiccup mode, recovers automatically after fault condition is removed | | | | | | | | | | | |
| | SHORT CIRCUIT | 15 ~ 21V | 18 ~ 24V | 23 ~ 30V | 28 ~ 35V | 35 ~ 43V | 41 ~ 49V | 48 ~ 58V | 54 ~ 63V | 59 ~ 68V | | | |
| PROTECTION | OVER VOLTAGE | | | | | | 41~490 | 40 ~ 30 V | 34 ~ 63 V | 39~00V | | | |
| | | Protection type: Shut down o/p voltage, re-power on to recover | | | | | | | | | | | |
| | OVER TEMPERATURE | 70°C ±10°C (RTH2) Protection type: Shut down o/o voltage, re-power on to recover. | | | | | | | | | | | |
| | | Protection type: Shut down o/p voltage, re-power on to recover | | | | | | | | | | | |
| | WORKING TEMP. | -40 ~ +50°C (Refer to "Derating Curve") | | | | | | | | | | | |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing | | | | | | | | | | | |
| ENVIRONMENT | STORAGE TEMP., HUMIDITY | -40 ~ +80 °C, 10 ~ 95% RH | | | | | | | | | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 40°C) | | | | | | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 2 | 2G 12min./1cyc | le, period for | 72min. each ald | ong X, Y, Z axe | S | | | | | | |
| | SAFETY STANDARDS | UL8750, CSA C22.2 No. 250.0-08 (except for 48V, 54V), EN61347-1, EN61347-2-13 independent, IP64, J61347-1, J61347-2-13 | | | | | | | | | | | |
| | O/II Z11 O//IIID/IIID | approved; design refer to UL60950-1, TUV EN60950-1, EN60335-1 | | | | | | | | | | | |
| SAFETY & | WITHSTAND VOLTAGE | I/P-O/P:3.75 | KVAC I/P-F | G:1.88KVAC | O/P-FG:0.5K | VAC | | | | | | | |
| EMC | ISOLATION RESISTANCE | I/P-O/P, I/P-F | G, O/P-FG:10 | 00M Ohms / 50 | 0VDC / 25°C / | 70% RH | | | | | | | |
| | EMC EMISSION | Compliance t | o EN55015, EN | 161000-3-2 CI | ass C (≧60% l | oad) ; EN6100 | 0-3-3 | | | | | | |
| | EMC IMMUNITY | Compliance t | o EN61000-4-2 | 2,3,4,5,6,8,11; | EN61547, EN5 | 5024, light indu | ustry level (surç | ge 4KV), criter | ia A | | | | |
| | MTBF | 336.5Khrs mi | n. MIL-HDB | K-217F (25°℃) | | | | | | | | | |
| OTHERS | DIMENSION | 161*61.5*35r | nm (L*W*H) | | | | | | | | | | |
| | PACKING | 0.35Kg;32pcs/12.2Kg/1.10CUFT | | | | | | | | | | | |
| NOTE | Ripple & noise are measure Tolerance : includes set up Constant current operation reconfirm special electrical | y mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. d at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. tolerance, line regulation and load regulation. egion is within 60% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please equirements for some specific system design. der low input voltages. Please check the static characteristics for more details. | | | | | | | | | | | |

- 6. Type A only.
- Type A city.
 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.
 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.

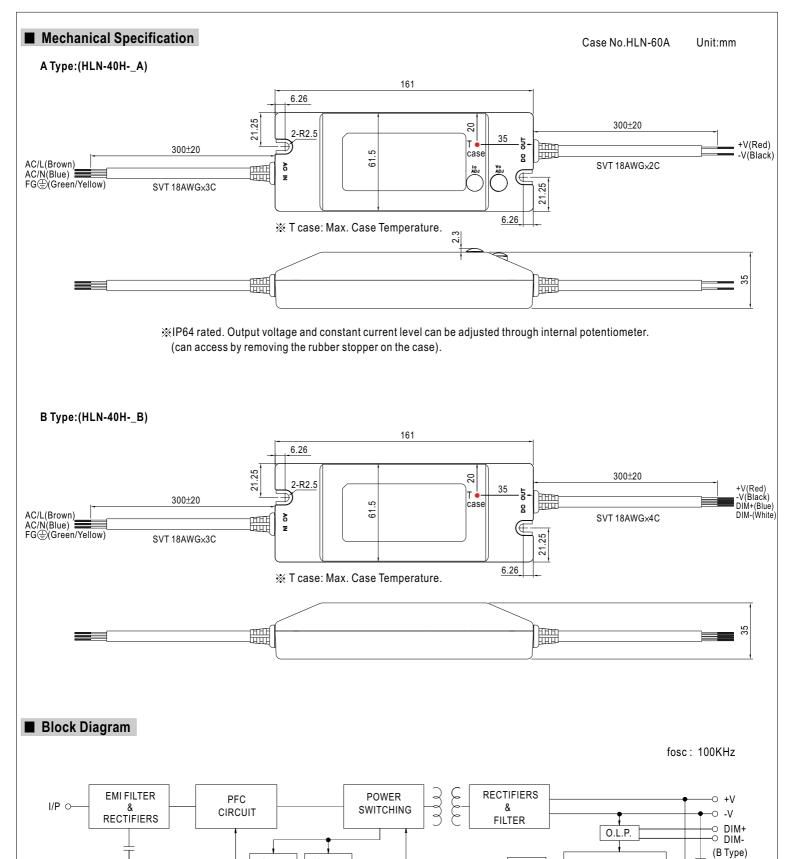
0.T.P.

0.L.P.

PWM & PFC CONTROL



FG O

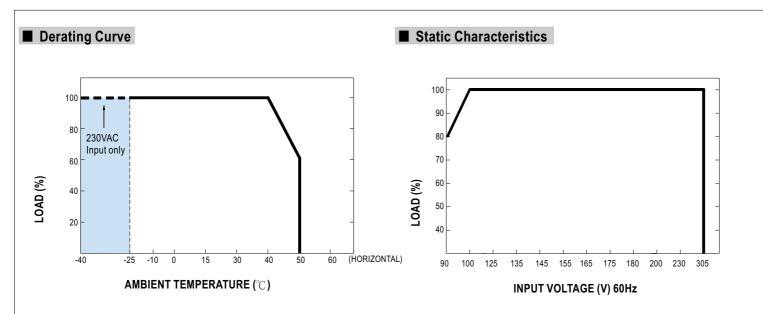


DETECTION

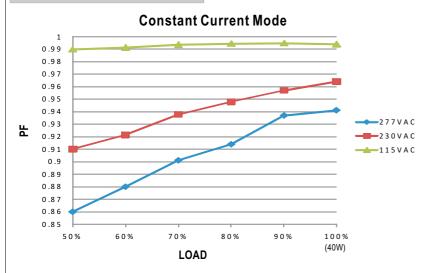
CIRCUIT

O.V.P.



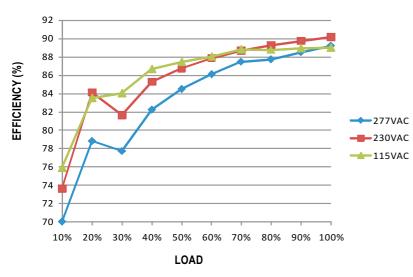


■ Power Factor Characteristic



■ EFFICIENCY vs LOAD (48V Model)

HLN-40H series possess superior working efficiency that up to 89% can be reached in field applications.



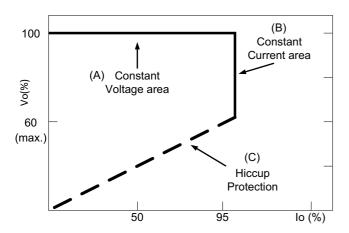


■ DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".

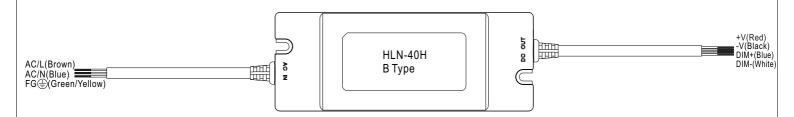
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.

Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B).



Typical LED power supply I-V curve

■ DIMMING OPERATION(for B-type only)



- X Vo and Io can not be adjusted (B type)
- ★ Built-in 3 in 1 dimming function, IP64 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 1 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.
- ※ Please DO NOT connect "DIM-" to "-V".
- X Reference resistance value for output current adjustment (Typical)

| Resistance | Single driver | 10K Ω | 20K Ω | 30 K Ω | 40K $Ω$ | 50K $Ω$ | 60 K Ω | 70K Ω | 80K Ω | 90K Ω | 100K Ω | OPEN |
|-----------------------------|---|--------------|--------------|-----------------|---------|---------|-----------------|--------------|--------------|--------------|---------------|----------|
| value | Multiple drivers (N=driver quantity for synchronized dimming operation) | 10KΩ/N | 20K Ω/N | 30K Ω/N | 40KΩ/N | 50KΩ/N | 60KΩ/N | 70KΩ/N | 80KΩ/N | 90K Ω/N | 100KΩ/N | |
| Percentage of rated current | | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%~105% |

| Dimming value | 1V | 2V | 3V | 4V | 5V | 6V | 7V | 8V | 9V | 10V | OPEN |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|
| Percentage of rated current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%~105% |

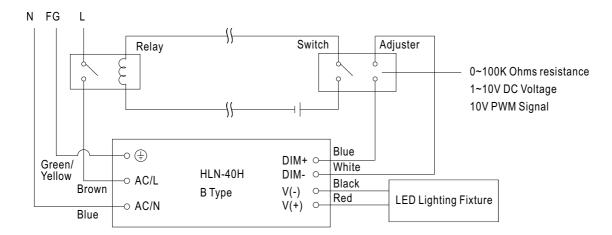
* 10V PWM signal for output current adjustment (Typical): Frequency range:100Hz ~ 3KHz

| Duty value | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | OPEN |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|
| Percentage of rated current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%~105% |



XUsing the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.

Dimming connection diagram for turning the lighting fixture ON/OFF:



Using a switch and relay can turn ON/OFF the lighting fixture.

- 1.Output constant current level can be adjusted through output cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.
- 2. The LED lighting fixture can be turned ON/OFF by the switch.