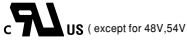
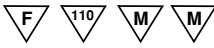




### ■ Features :

- 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
- IP67 / IP65 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 / wet locations
- 5 years warranty (Note.10)



HLG-60H-12[A] Blank : IP67 rated. Cable for I/O connection.  
 A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.  
 B : IP67 rated. Constant current level adjustable through output cable with 1~10Vdc or 10V PWM signal or resistance.  
 D (option) : IP67 rated. Timer dimming function, contact MEAN WELL for details.

### SPECIFICATION

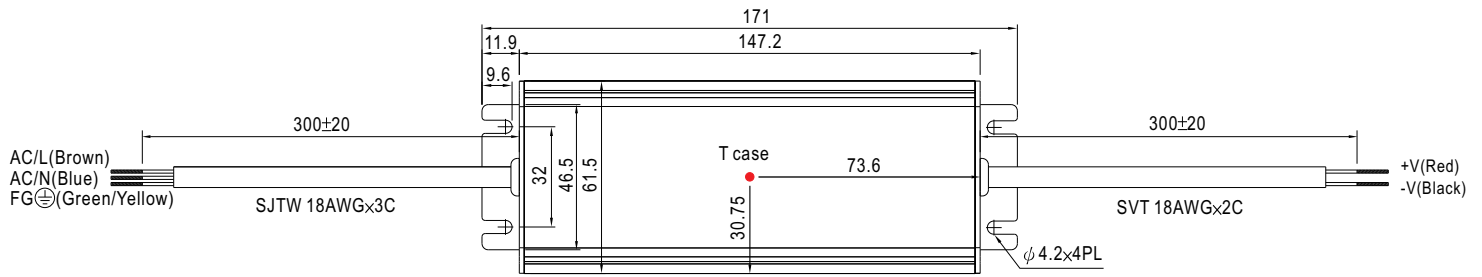
| MODEL                   | HLG-60H-15  | HLG-60H-20  | HLG-60H-24               | HLG-60H-30                         | HLG-60H-36 | HLG-60H-42     | HLG-60H-48   | HLG-60H-54  |              |
|-------------------------|---|---|--------------------------|------------------------------------|------------|----------------|--------------|-------------|--------------|
| OUTPUT                  | DC VOLTAGE  | 15V   | 20V                      | 24V                                | 30V        | 36V            | 42V          | 48V         | 54V          |
|                         | CONSTANT CURRENT REGION Note.4  | 9 ~ 15V   | 12 ~ 20V                 | 14.4 ~ 24V                         | 18 ~ 30V   | 21.6 ~ 36V     | 25.2 ~ 42V   | 28.8 ~ 48V  | 32.4 ~ 54V   |
|                         | RATED CURRENT   | 4A  | 3A                       | 2.5A                               | 2A         | 1.7A           | 1.45A        | 1.3A        | 1.15A        |
|                         | RATED POWER   | 60W   | 60W                      | 60W                                | 60W        | 61.2W          | 60.9W        | 62.4W       | 62.1W        |
|                         | RIPPLE & NOISE (max.) Note.2  | 150mVp-p  | 150mVp-p                 | 150mVp-p                           | 200mVp-p   | 200mVp-p       | 300mVp-p     | 300mVp-p    | 300mVp-p     |
|                         | VOLTAGE ADJ. RANGE Note.6   | 13.5 ~ 17V  | 17 ~ 22V                 | 22 ~ 27V                           | 27 ~ 33V   | 33 ~ 40V       | 40 ~ 46V     | 44 ~ 53V    | 49 ~ 58V     |
|                         | CURRENT ADJ. RANGE  | Can be adjusted by internal potentiometer or through output cable   |                          |                                    |            |                |              |             |              |
|                         |   | 2.4 ~ 4A  | 1.8 ~ 3A                 | 1.5 ~ 2.5A                         | 1.2 ~ 2A   | 1 ~ 1.7A       | 0.87 ~ 1.45A | 0.78 ~ 1.3A | 0.69 ~ 1.15A |
|                         | VOLTAGE TOLERANCE Note.3  | ±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%        |
| LOAD REGULATION         | ±1.5%   | ±1.0%   | ±0.5%                    | ±0.5%                              | ±0.5%      | ±0.5%          | ±0.5%        | ±0.5%       |              |
| SETUP, RISE TIME Note.8 | 1500ms, 80ms / 115VAC at full load  |   |                          | 1000ms, 80ms / 230VAC at full load |            |                |              |             |              |
| HOLD UP TIME (Typ.)     | 16ms/230VAC   |   | 16ms/115VAC at full load |                                    |            |                |              |             |              |
| INPUT                   | VOLTAGE RANGE Note.5  | 90 ~ 305VAC   |                          | 127 ~ 431VDC                       |            |                |              |             |              |
|                         | FREQUENCY RANGE   | 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)   |                          |                                    |            |                |              |             |              |
|                         | EFFICIENCY (Typ.)   | 87.5%   | 89%                      | 89.5%                              | 90%        | 90%            | 90%          | 90.5%       | 90.5%        |
|                         | AC CURRENT (Typ.)   | 0.64A / 115VAC  |                          | 0.32A / 230VAC                     |            | 0.3A / 277VAC  |              |             |              |
|                         | INRUSH CURRENT(Typ.)  | COLD START 70A/230VAC   |                          |                                    |            |                |              |             |              |
| LEAKAGE CURRENT         | <0.75mA / 277VAC  |   |                          |                                    |            |                |              |             |              |
| PROTECTION              | OVER CURRENT Note.4   | 95 ~ 108%   |                          |                                    |            |                |              |             |              |
|                         |   | Protection type : Constant current limiting, recovers automatically after fault condition is removed  |                          |                                    |            |                |              |             |              |
|                         | SHORT CIRCUIT   | Hiccup mode, recovers automatically after fault condition is removed  |                          |                                    |            |                |              |             |              |
|                         | OVER VOLTAGE  | 18 ~ 24V  | 23 ~ 30V                 | 28 ~ 35V                           | 35 ~ 43V   | 41 ~ 49V       | 48 ~ 58V     | 54 ~ 63V    | 59 ~ 68V     |
|                         | Protection type : Shut down o/p voltage, re-power on to recover   |   |                          |                                    |            |                |              |             |              |
| OVER TEMPERATURE        | 95°C ±10°C (RTH2)   |   |                          |                                    |            |                |              |             |              |
|                         | Protection type : Shut down o/p voltage, re-power on to recover   |   |                          |                                    |            |                |              |             |              |
| ENVIRONMENT             | WORKING TEMP.   | -40 ~ +70°C (Refer to "Derating Curve")   |                          |                                    |            |                |              |             |              |
|                         | WORKING HUMIDITY  | 20 ~ 95% RH non-condensing  |                          |                                    |            |                |              |             |              |
|                         | STORAGE TEMP., HUMIDITY   | -40 ~ +80°C, 10 ~ 95% RH  |                          |                                    |            |                |              |             |              |
|                         | TEMP. COEFFICIENT   | ±0.03%/°C (0 ~ 60°C)  |                          |                                    |            |                |              |             |              |
| VIBRATION               | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes   |   |                          |                                    |            |                |              |             |              |
| SAFETY & EMC            | SAFETY STANDARDS Note.7   | UL8750, CSA C22.2 No. 250.0-08 (except for 48V, 54V), EN61347-1, EN61347-2-13 independent, IP65 or IP67, J61347-1, J61347-2-13 approved ; design refer to UL60950-1, TUV EN60950-1, EN60335-1 |                          |                                    |            |                |              |             |              |
|                         | WITHSTAND VOLTAGE   | I/P-O/P:3.75KVAC  |                          | I/P-FG:1.88KVAC                    |            | O/P-FG:0.5KVAC |              |             |              |
|                         | ISOLATION RESISTANCE  | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH  |                          |                                    |            |                |              |             |              |
|                         | EMC EMISSION  | Compliance to EN55015, EN61000-3-2 Class C (≥60% load) ; EN61000-3-3  |                          |                                    |            |                |              |             |              |
|                         | EMC IMMUNITY  | Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, EN55024, light industry level (surge 4KV), criteria A  |                          |                                    |            |                |              |             |              |
| OTHERS                  | MTBF  | 338Khrs min. MIL-HDBK-217F (25°C)   |                          |                                    |            |                |              |             |              |
|                         | DIMENSION   | 171*61.5*36.8mm (L*W*H)   |                          |                                    |            |                |              |             |              |
|                         | PACKING   | 0.73Kg; 20pcs/15.6Kg/0.8CUFT  |                          |                                    |            |                |              |             |              |
| NOTE                    | <ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>4. Constant current operation region is within 60% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.</li> <li>5. Derating may be needed under low input voltages. Please check the static characteristics for more details.</li> <li>6. Type A only.</li> <li>7. Safety and EMC design refer to EN60598-1, CNS15233, GB7000.1, FCC part18.</li> <li>8. 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.</li> <li>9. 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.</li> <li>10. Refer to warranty statement.</li> </ol> |   |                          |                                    |            |                |              |             |              |

**Mechanical Specification**

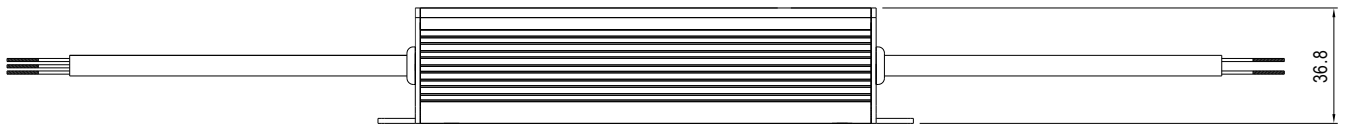
Case No.957B

Unit:mm

**Blank:(HLG-60H)**

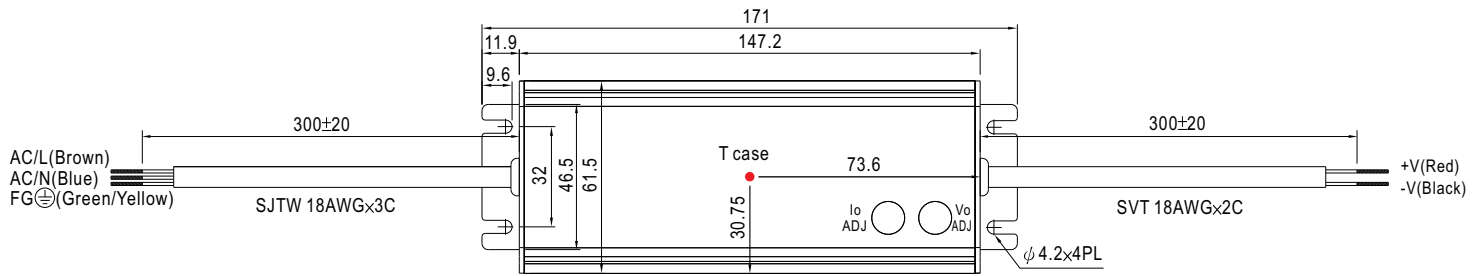


※ T case: Max. Case Temperature.

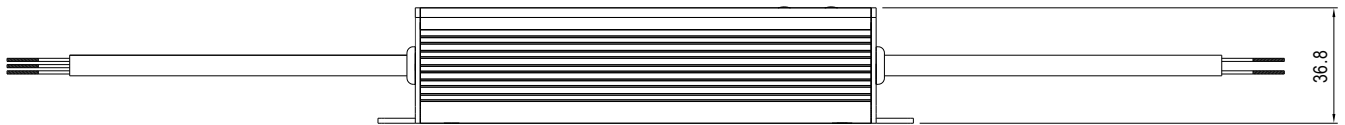


※IP67 rated. Cable for I/O connection.

**A Type:(HLG-60H- \_A)**

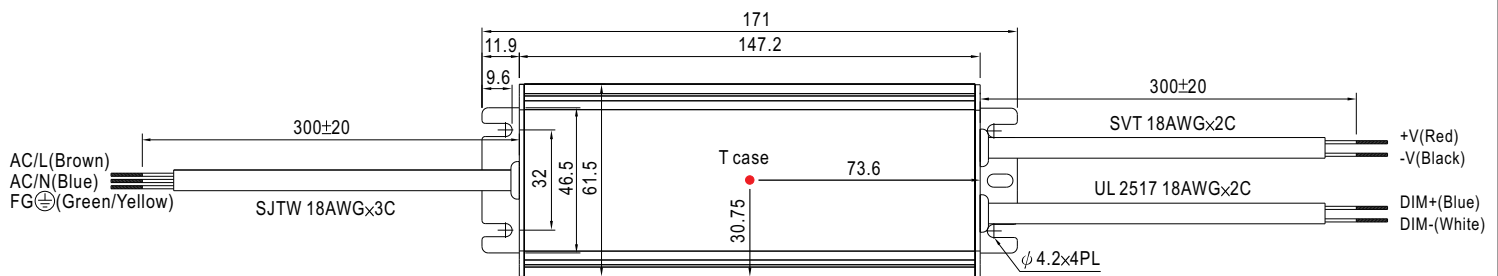


※ T case: Max. Case Temperature.

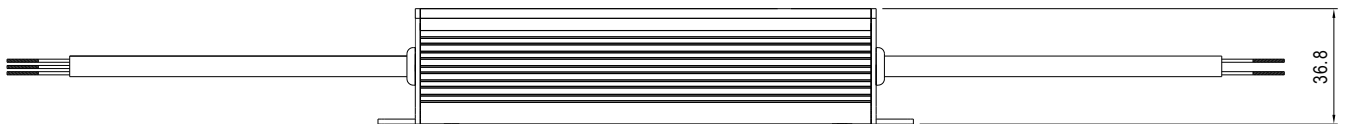


※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.  
(Can access by removing the rubber stopper on the case.)

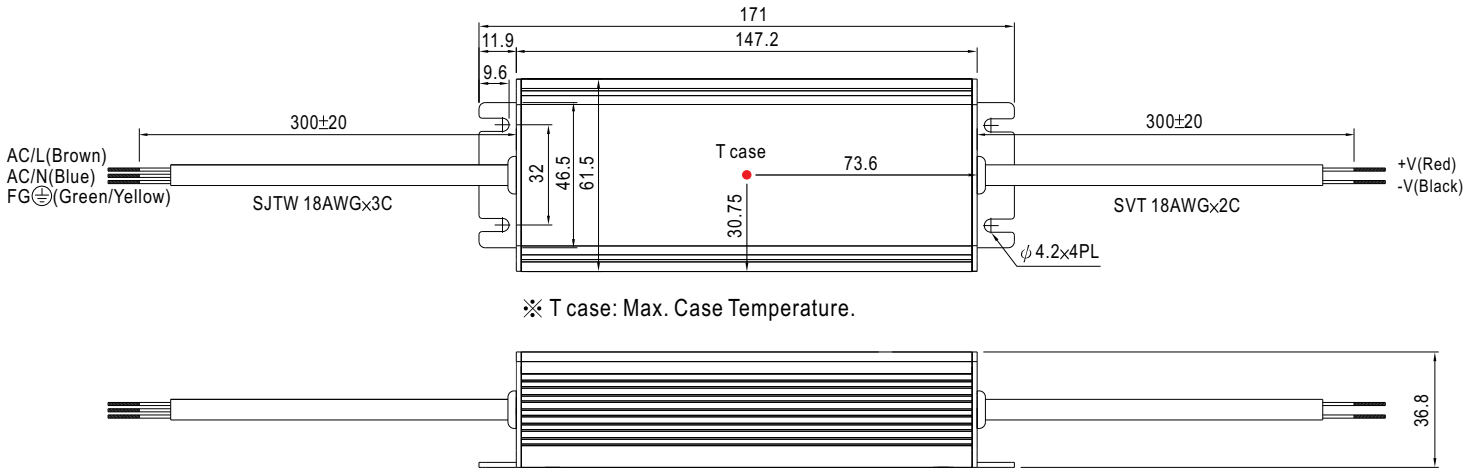
**B Type:(HLG-60H- \_B)**



※ T case: Max. Case Temperature.



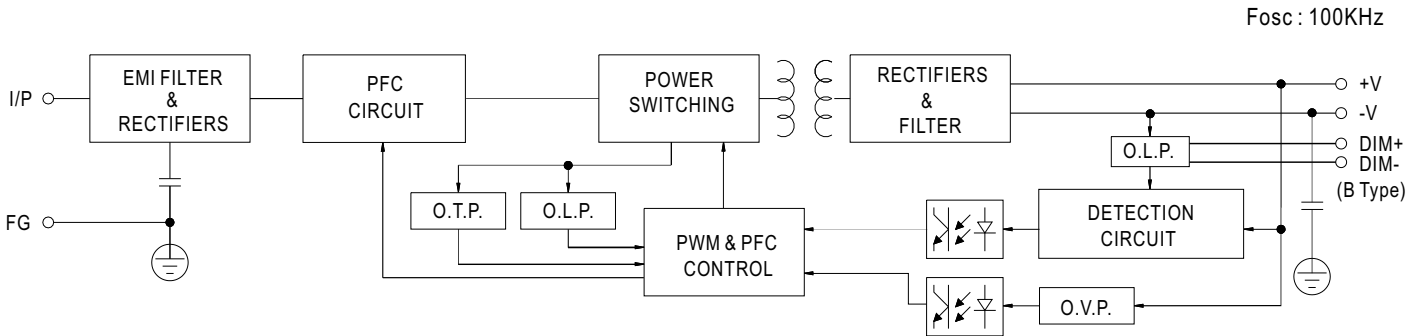
**D Type(option):(HLG-60H-\_D)**



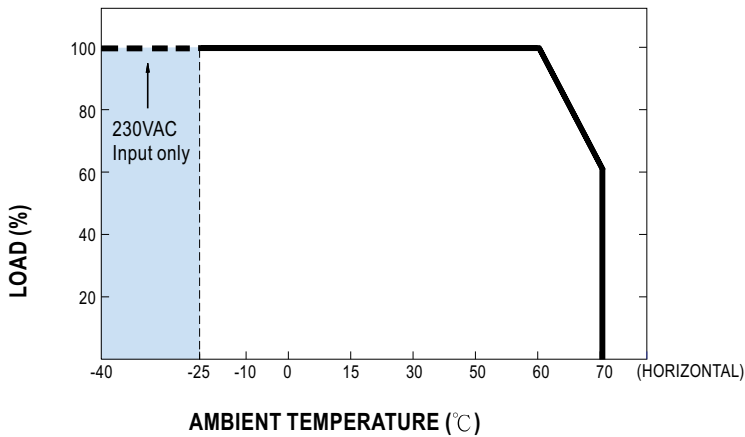
※ T case: Max. Case Temperature.

※ IP67 rated. Timer dimming function, contact MEAN WELL for details.

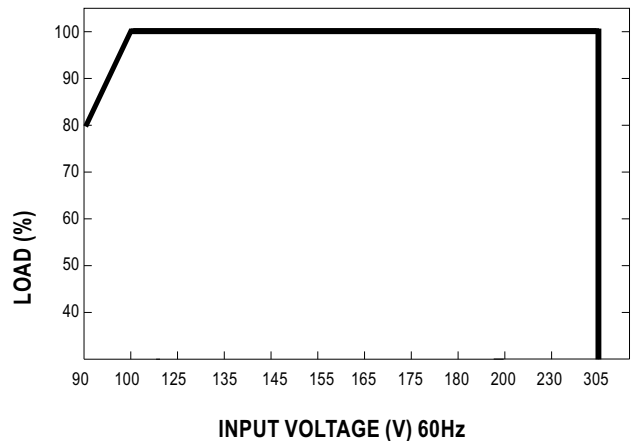
**Block Diagram**



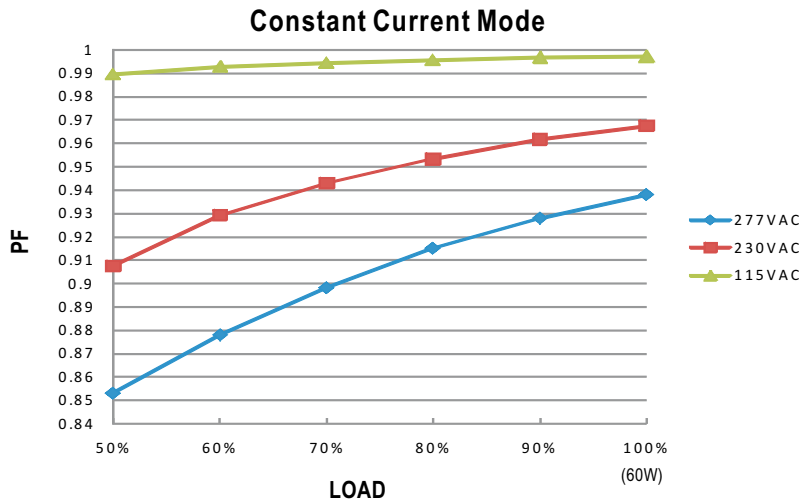
**Derating Curve**



**Static Characteristics**

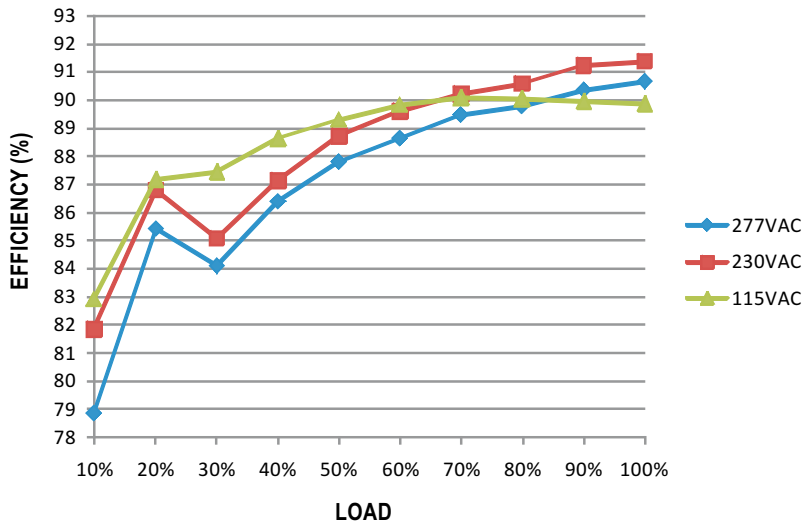


### Power Factor Characteristic



### EFFICIENCY vs LOAD (48V Model)

HLG-60H series possess superior working efficiency that up to 90.5% can be reached in field applications.

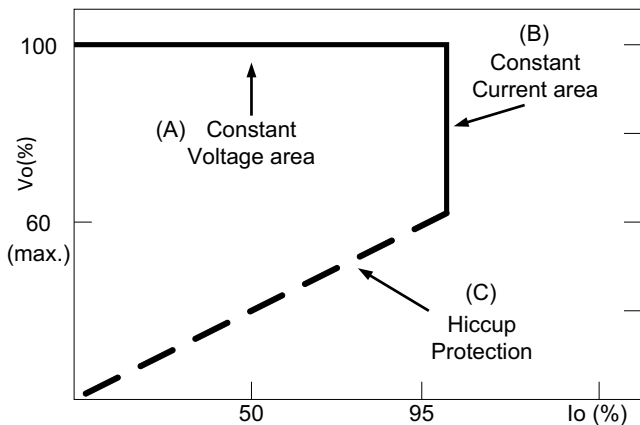


### DRIVING METHODS OF LED MODULE

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**



※ Built-in 3 in 1 dimming function, IP67 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".

※ Reference resistance value for output current adjustment (Typical)

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

※ 1 ~ 10V dimming function for output current adjustment (Typical)

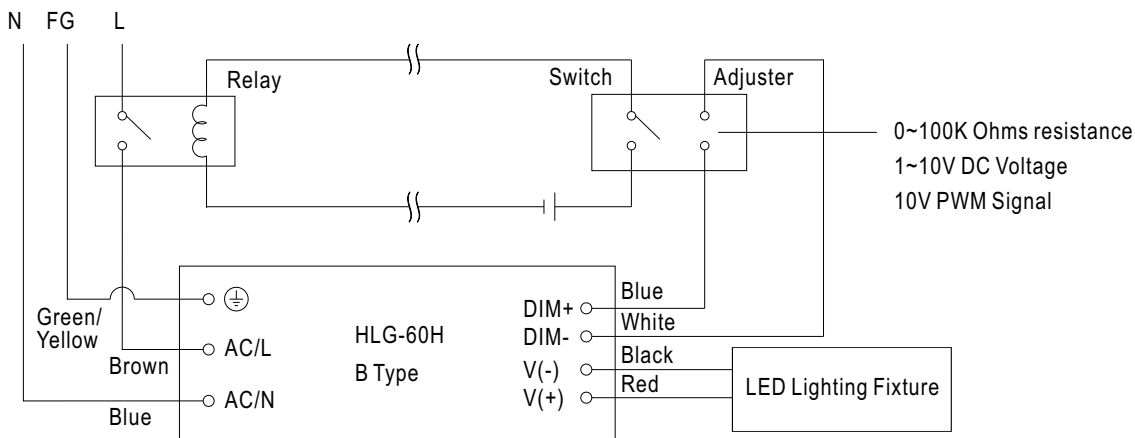
| Dimming value               | 1V  | 2V  | 3V  | 4V  | 5V  | 6V  | 7V  | 8V  | 9V  | 10V  | OPEN     |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|
| Percentage of rated current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |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

※Using 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 :



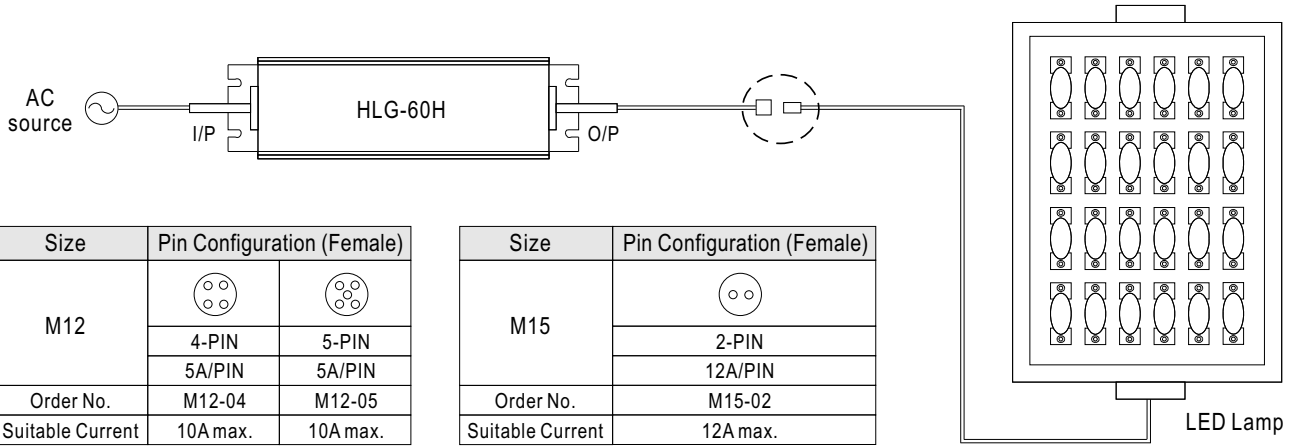
Using a switch and relay can turn ON/OFF the lighting fixture.

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.

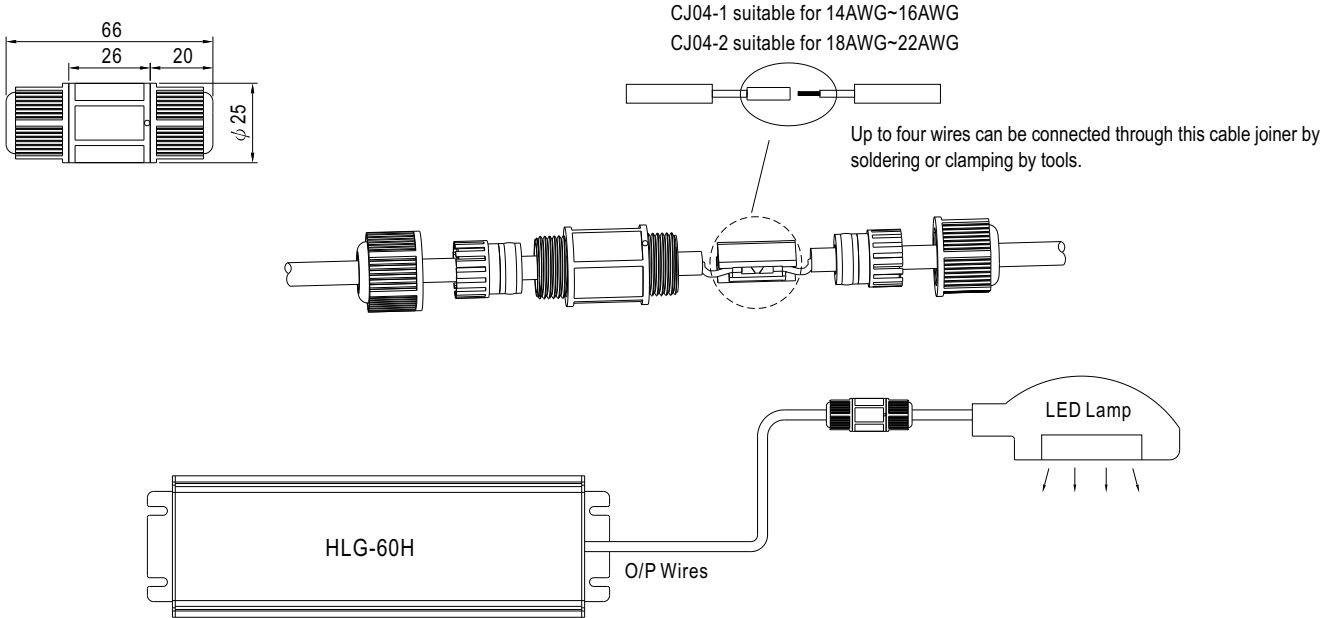
## ■ WATERPROOF CONNECTION

### ◎ Waterproof connector

Waterproof connector can be assembled on the output cable of HLG-60H to operate in dry/wet/damp or outdoor environment.



### ◎ Cable Joiner



※CJ04 cable joiner can be purchased independently for user's own assembly.  
 MEAN WELL order No. : CJ04-1, CJ04-2.



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